DOCUMENT RESUME

ED 480 027 SO 035 109

AUTHOR	Craig, Suzan M. W.
TITLE	Escalante Pueblo Curriculum: An Educator's Guide to the Exhibits and Sites at the Anasazi Heritage Center.
ISBN	ISBN-1-878178-16-4
PUB DATE	2002-00-00
NOTE	166p.; Prepared by the Bureau of Land Management, Anasazi Heritage Center, Canyons of the Ancients National Monument (Dolores, CO). Project managed by Public Lands Interpretive Association. Support provided by the Colorado Historical Society.
AVAILABLE FROM	Bureau of Land Management, Anasazi Heritage Center, 27501 Highway 184, Dolores, CO 81323. Tel: 970-882-4811; Fax: 970-882-7035. For full text: http://www.co.blm.gov/ahc/epc.pdf.
PUB TYPE	Guides - Classroom - Teacher (052)
EDRS PRICE	EDRS Price MF01/PC07 Plus Postage.
DESCRIPTORS	*American Indian Culture; *Archaeology; Curriculum Enrichment; Field Trips; Heritage Education; Intermediate Grades; Material Culture; Middle Schools; *Museums; Primary Sources; State Standards; Student Educational Objectives; *Thematic Approach
IDENTIFIERS	*Anasazi (Anthropological Label); Artifacts; Colorado; *Site Visits

ABSTRACT

Colorado's residents are reminded of the land's past residents, the Northern San Juan Ancestral Puebloans. Their artifacts are encountered throughout the state. What can people learn from the Ancestral Puebloans about how to live on this landscape? The "Escalante Pueblo Curriculum" is designed to enhance a teacher's options for educational activities at the Anasazi Heritage Center (Dolores, Colorado). The curriculum's broad learning goals are to help students: appreciate why archaeology and site conservation are important; understand the processes archaeologists use to study and interpret past people and lifeways; and picture the day-to-day life of the Northern San Juan Ancestral Puebloans. The curriculum is divided into four parts: (1) "The Field Trip Core" (Museum Adventures; Family Life: Listening to How People Lived; Gallery Walk: Learning from the Main Gallery Exhibits; Ancient Neighbors: Touring Dominguez and Escalante Sites); (2) "In-Depth Thematic Sections" (Pueblo Culture--Experiencing the Lifeways of a People; Corn Is Life: A Weave of Religion, Economy, and Community; A Sense of Place: Perceiving the Landscape); (3) "The Nurturing Environment--Discovering Relationships between People and Nature" (Feathered Friends: Bird Watching and Views on Birds; Nature's Harvest: Investigating Plants and Their Uses); (4) "Archaeology in Action Doing and Thinking Archaeology Science" (Why Build on the Hill?: Inquiring about Escalante; Context and Clues: Analyzing Rooms with Artifacts; and Mapping and Measuring: Estimating Population through Site Area). Contains four appendices: standards information, a glossary, annotated bibliography and readings, and teacher evaluation form. (BT)

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ED 480 027

Escalante Pueblo Curriculum

An Educator's Guide to the Exhibits and Sites at the *Anasazi Heritage Center*

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2002

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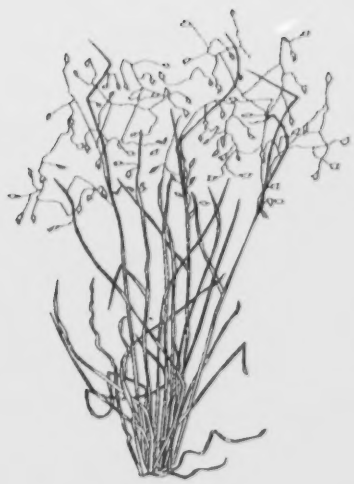

ISBN 1-878178-16-4

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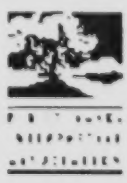
BLM Anasazi Heritage Center's Main Gallery, pp. 19, 24
and
People in the Past, an educational CD-ROM produced for the BLM Anasazi Heritage Center
by Paradox Productions and Living Earth Studios
and
The Crow Canyon Archaeological Center Laboratory Teaching Manual,
illustrated by Lee R. Schmidlap, Jr., and Bruce A. Bradley, pp. 105-147.

This project was managed by *Public Lands Interpretive Association* in support of the *BLM Anasazi Heritage Center*. It was partially funded by a *State Historical Fund* grant award from the *Colorado Historical Society*. Additional funds were provided by *Anasazi Heritage Center* visitor entry fees as part of the Fee Demonstration Program.



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Welcome from the Bureau of Land Management Anasazi Heritage Center

We are pleased to provide you with a curriculum to enhance your school field trips. When this project started, we asked, "Why should we create a museum curriculum?" Clearly, we wanted to help students learn from the exhibits and better understand Escalante Pueblo. But, why is that important? To answer that question, we need to address a familiar students' mantra: "Why are we studying this?," which translates into, "How does this relate to me and my life?" and "Why should I care?" Those are hard questions to answer. Yet ideally, every teacher should be prepared to answer them without hesitation at the beginning of each new unit.

For the staff at the Anasazi Heritage Center, understanding the past is essential. The past informs and inspires our lives; it grounds us in who we are today. Because we live in a technology- and future-oriented society, it is easy to forget about what came before. Studying archaeology is important because it reveals part of an area's ancient history and broadens our perspectives of how people can live in various societies.

Fortunately, curiosity about the past often comes naturally to many who live and study in the Four Corners region. We are moved by the dramatic landscape. As we work and play on the land, we are reminded of its past residents, the Northern San Juan Ancestral Puebloans, whose artifacts we encounter everywhere. The ancient objects intrigue and mystify us. Who were these people and why did they leave? What can we learn from the Ancestral Puebloans about how to live on this landscape?

There are also important educational and legal implications for studying the archaeology of the Ancestral Puebloans. Archaeology encompasses a wide range of academic subjects including science, math, social studies, language arts, literature, art, music, and more. Many mandated standards can be covered in one thematic unit. Additionally, archaeological sites on public land are protected by law. Unfortunately, they are being destroyed at an alarming rate. Archaeology education helps students value sites and motivates responsible conservation actions.

Lastly, the history of racial and cultural prejudice is well documented in our country. No generation seems immune. Perhaps by studying the Ancestral Puebloans we generate appreciation and respect for their descendants, the contemporary Pueblo people of the Southwest, and Native American cultures in general.

We hope the *Escalante Pueblo Curriculum* informs *and* inspires your students. We anticipate developing other educational materials in the future. Your comments and suggestions are welcome to help guide our efforts. We are grateful to the Colorado Historical Society, the State Historical Fund, and the Public Lands Interpretive Association for financial assistance in producing this curriculum. We also appreciate the many scholars, educators, and students who provided inspiration and guidance in creating these lessons.

We look forward to your visit!

About the Curriculum

What are the curriculum goals?

The *Escalante Pueblo Curriculum* is designed to enhance your options for educational activities at the Anasazi Heritage Center. The broad learning goals for the curriculum are to help students:

- Appreciate why archaeology and site conservation are important.
- Understand the processes archaeologists use to study and interpret past people and lifeways.
- Picture the day-to-day life of the Northern San Juan Ancestral Puebloans.

Each activity lists specific student objectives as part of the lesson plan.

To achieve these goals and objectives, students visit and learn about the Escalante and Dominguez Pueblos. These archaeological sites, located on the grounds of the Anasazi Heritage Center, anchor the students' learning about Ancestral Puebloans in real, tangible places. They carry the students to a time period when the Ancestral Puebloan people were living in the Northern San Juan region, around A.D. 1120.

The Northern San Juan Ancestral Puebloans had a rich culture. They worked, played, struggled, and survived in this area longer than the United States has been a nation. Although the people moved from their homes in the Four Corners region, many aspects of the Ancestral Pueblo culture persist in the contemporary people of the Southwest. Contemporary pueblo perspectives and traditions are incorporated in the exhibit texts and activity summaries.

Who should use the curriculum?

All school teachers and nonformal educators, such as Scout and 4-H leaders, parents, and museum docents, are invited to use this book. The activities, designed for fourth- through eighth-grade students are part of a structured student field trip to the Anasazi Heritage Center lead by adult supervisors. The activities are easily adjusted up or down in ability or grade level.

How is the curriculum structured?

Museum Adventures: The Field Trip Core provides a complete survey of the museum and may be used during a two- to three-hour visit or as the basis for a longer stay. The three complementary activities include an introductory story, a guide to the museum's Main Gallery, and a tour to the Escalante and Dominguez sites.

In-depth Thematic Sections provide options for more student learning and experiences for longer or return museum visits. Each of the three sections has several activities that build on the foundation of *The Field Trip Core*. Additionally, museum docents can present hands-on extension activities while at the museum or provide guide sheets for classroom extensions.

What is included in the activities?

Lesson Plans. These plans are used by the teacher in making decisions about the field trip. Each plan includes academic subjects, student skills, estimated activity duration, and Colorado Model Content Standards, as well as an activity summary, student learning objectives, materials, vocabulary, procedures, optional extensions, suggested assessments, background information, and references. The skills listed are those that students are expected to achieve. The terms come from Bloom's taxonomy of educational objectives and related research.

Group Leader Summary and Instructions. These pages will be copied by the teacher prior to the field trip. Adult chaperones who supervise student breakout groups will use them to lead activities at the museum.

Student Notebooks. These activity sheets are ready to be copied by the teacher for each student and will be used during the field trip. For brevity, the students can answer questions from the student notebooks verbally, and the group leader can record the answers in one notebook. Teachers will decide how best to organize the activities to meet student and trip needs.

What are the instructional strategies?

The instructional strategies employed in the curriculum address a variety of learning styles and subject areas. Team work, or cooperative learning, is included in recognition of the museum's multicultural student audience needs (see Hansen in the Annotated Bibliography and Recommended Readings). Also, small rotational groups or teams work best logistically in the museum.

Students *experience* archaeological techniques and Ancestral Puebloan lifeways directly rather than learning about them remotely. Experiential and authentic learning strategies can have an enduring impact on students both emotionally and intellectually (Abrams, and Dewey). The museum setting of the Anasazi Heritage Center provides a unique opportunity for real experiences.

To aid teachers in meeting strict academic student standards, we have included various reading, writing, and math strategies. Components of science inquiry are employed throughout the curriculum as well (see the Colorado Model Content Standards chart).

Where do the activities take place?

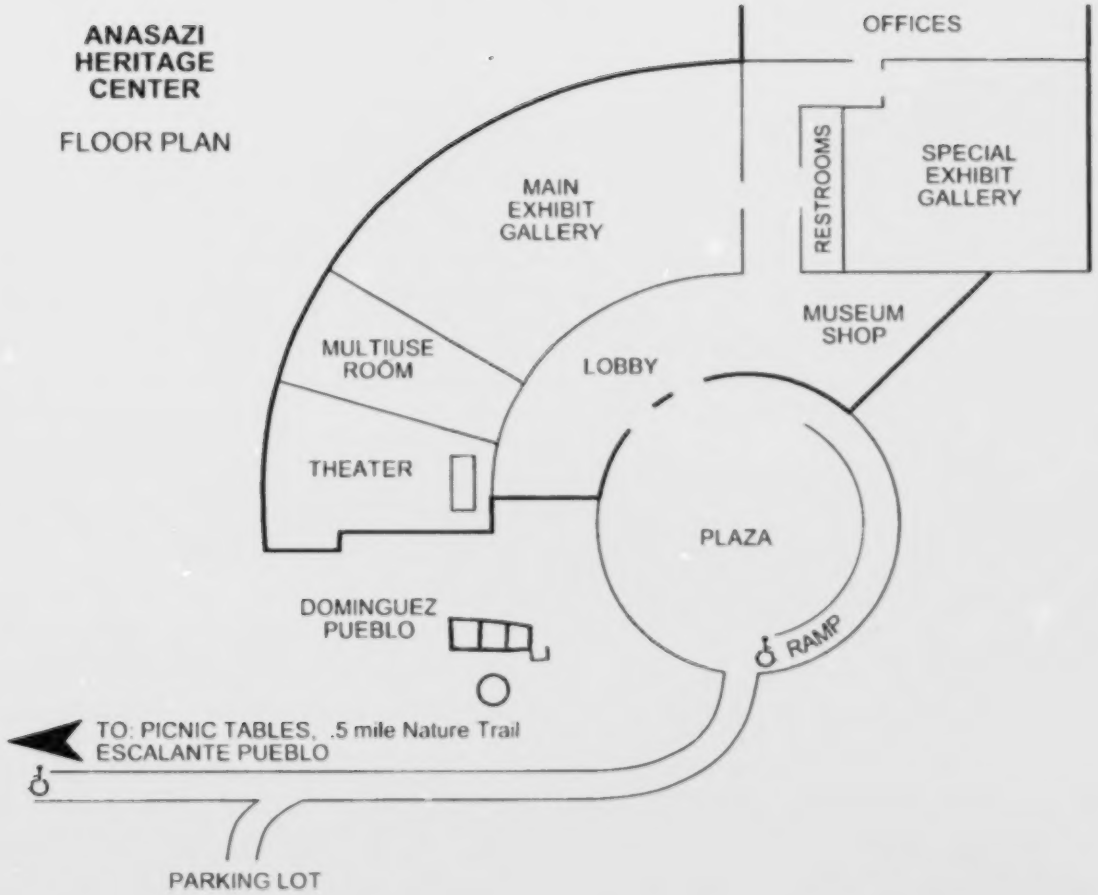
All activities take place on the museum grounds at the Dominguez and Escalante sites, in the Main Gallery, theater, plaza, or multiuse room. They work best in small groups of five to ten students with an adult group leader. For larger groups, several activities can be organized into rotational learning stations at various places around the museum. Some of the activities can be adjusted to use in a classroom or at other archaeological sites.

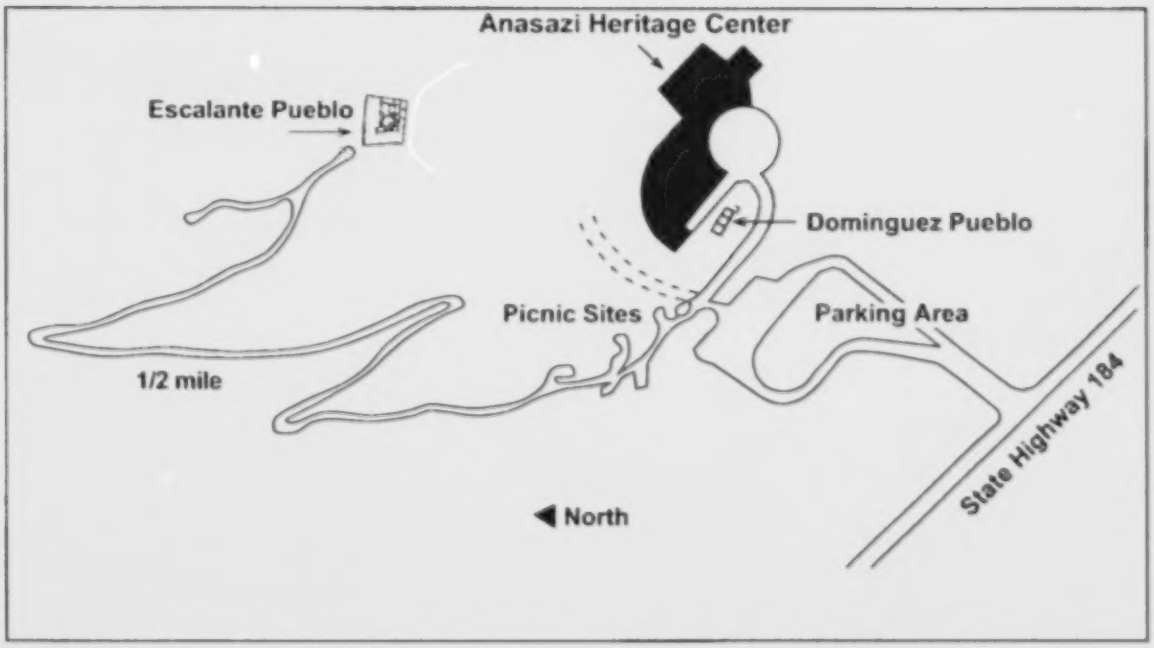
How do I schedule a field trip?

As early as possible prior to the trip, please call the Anasazi Heritage Center at (970) 882-4811 to schedule the date, time, and number of students expected for your visit. A confirmation notice and a copy of the current field trip guide will be mailed to you. The museum educator will contact you before your visit to help with planning.

ANASAZI HERITAGE CENTER

FLOOR PLAN





Anasazi Heritage Center, Site Map

I. Museum Adventures - The Field Trip Core

Introduction
Family Life
Gallery Walk
Ancient Neighbors

I. Museum Adventures - The Field Trip Core

Introduction

The activities in *Museum Adventures* enhance students' experience for a two- to three-hour visit through the Main Gallery and to the Dominguez and Escalante Pueblos. The same activities can serve as an introduction to longer visits as well.

The three core activities in *Museum Adventures* give an overview of Ancestral Puebloan culture in the Northern San Juan region, introduce archaeological concepts, and interpret the Dominguez and Escalante Pueblos. The *Family Life* story paints a personalized central image to which students can relate many disparate details from the other activities. Present this story to your whole class before splitting up into small groups with group leaders. The *Gallery Walk* and *Ancient Neighbors* tour provide coherent and fun ways for students to learn from the exhibits and displays. They also deliver an essential preservation message that concludes with the *Junior Archaeologist Pledge*.

Defining the Ancestral Puebloan and Northern San Juan People
Recently, archaeologists have started using *Ancestral Puebloan* in reference to the culture and people who lived in the greater Four Corners region. The name Ancestral Puebloan—formerly the Anasazi—more accurately reflects who the people were. These people's lifestyle or culture is related to that of today's Pueblo people. They were farmers of corn, beans, and squash; builders of stone houses; and makers of baskets and pottery. Contemporary Pueblo groups consider the Ancestral Puebloans their ancestors, and their ancient living places are thought to be sacred. For that reason, the words *abandoned* and *ruin* are somewhat offensive to Pueblo people today and are generally no longer used. The preferred terms are *migrated* or *moved* and *archaeological site* or *pueblo*. Pueblo people continue to visit and pay respect to the homes of their ancestors. Some of the museum exhibits have not yet been updated to reflect these name and word changes.

The traditional Navajo lifestyle was different from the Pueblo lifestyle. One translation of the Navajo word Anasazi is "Ancient Others." The archaeological record indicates that the Navajos were migrant hunters and gatherers, part-time farmers, and builders of temporary houses called hogans. Linguistic and archaeological evidence indicates that it was unlikely that the Navajos were in the Southwest before A.D. 1300. Their language is related to that of the Athabaskan people of the Northwest Coast. There has been much knowledge and culture exchanged between Navajos and Pueblo people in the last few hundred years.

Like the Navajos, the Ute people still live in the Four Corners region. Ancestors of the Utes may have been in the region when the Ancestral Puebloans were here. Their language is related to that of the Hopi and other western tribes. Trade and intermarriage may have occurred. Yet, their traditional mountain lifestyle was that of hunting and gathering wild foods and resources. They were experts at "leave no trace" camping. Their lifestyle did not leave behind many durable artifacts for archaeologists to study. If the Utes were in the region at the time of the Ancestral Puebloans, it is difficult to establish archaeologically. However, modern Ute Elders say they have no migration stories because they have always been here.

The Northern San Juan people were Ancestral Puebloans who lived in the region above the San Juan River in the contemporary Four Corners area. (See the Ancestral Puebloan map at

the entrance to the museum gallery. The term "Mesa Verde Ancestral Puebloans" refers to the same group of people.) Their material culture had distinct characteristics. But like all Ancestral Puebloans, the Northern San Juan people of about A.D. 1120 farmed, built masonry homes that included special underground rooms called kivas, made pottery, and gathered resources from the landscape.

Pueblo people are still in the Southwest today; they did not disappear. They simply moved from the Northern San Juan region to what are now the villages of the Hopi, Zuni, Tanoan, and Keresan people in Arizona and New Mexico. Pueblo traditions are still intact despite the many cultural conflicts and environmental changes in the Southwest over the last thousand years. Pueblo history is a story of success and survival (see Sando in the Annotated Bibliography and Recommended Readings).

The Changing View of the Past

The information presented in this curriculum and in the exhibits at the Anasazi Heritage Center comes from many sources. Much of this knowledge is based on archaeological research, a discipline using scientific methods to answer questions about the past. Additional perspectives and interpretations come directly from contemporary Pueblo people, who are the descendants of the people who lived in the ancient sites. Their contributions are based on traditions and stories passed orally from generation to generation. Their perspectives arise from deeply felt spiritual connections to their ancestors and the past.

Emerging from a sense that the ancient pueblo is a living, sacred, and spiritually significant place, Native American interpretations sometimes disagree with archaeological conclusions. Those interpretations, however, are no less valid or meaningful. The Anasazi Heritage Center consults with southwestern tribes on many topics related to the ancient sites of southwest Colorado. This expanded dialogue between archaeologists and Native Americans has created a more complete and balanced understanding of the past. These new perspectives are being incorporated into research plans, museum exhibits, student textbooks, and popular literature.

The archaeological information presented in this curriculum is based on recent research. Yet it will likely soon change. Archaeologists constantly question each other's methods of research and inferences. They freely disagree and actively seek evidence contradicting established theories. Interpretations of the past can change rapidly because of new research or critical review of old research.

For more on the relationship between Native Americans and archaeologists, see Swidler, Dongoske, Anyon, and Downer in the Annotated Bibliography and Recommended Readings.

Family Life: Listening to How People Lived

SUBJECTS: Social Studies, Science, Art, Language Arts, Reading
SKILLS: Cognitive—knowledge, comprehension
Affective—receiving, valuing
Psychomotor—perceiving (listening)
DURATION: 5 minutes minimum

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—3,4 Geography—2,6
Visual Arts—1
Music—5
History—1,3,4

Activity Summary
Students listen to a brief story about life in the Dominguez Pueblo in A.D. 1120. They imagine themselves as part of an Ancestral Puebloan family involved in daily activities.

Objectives
Students will be able to
1. Explain some of the daily activities of a Northern San Juan Ancestral Puebloan family.
2. Identify archaeological artifacts in the context of how they were used originally.

Materials
- *Family Life* student notebook for each student
- *Family Life* group leader instructions
- Clipboards (available at the AHC)
- Pencils

Vocabulary
Ancestral Puebloan
juniper
piñon
plaza
yucca

Helpful Hints

This story helps focus the students after a long bus ride. Students can better listen and visualize the story if they are sitting down and do not yet have papers in their hands.

Younger students may enjoy the coloring and labeling extension for the *Family Life* picture over the more complex *Gallery Walk* activity in the Main Gallery.

Procedure

Place
Read the story in the AHC plaza or, during inclement weather, in the theater or multiuse room.

Activity
1. Have students join their assigned groups and sit quietly. A museum representative will discuss appropriate behavior while visiting the museum.
2. A group leader reads the *Family Life* story from the group leader instruction sheet. Students can close their eyes and listen or look at the *Family Life* picture while the story is read.
3. Review the field trip agenda and strategies for station rotations.
4. Distribute the photocopied student notebook pages and group leader sheets for all other field trip activities. Pass out clipboards and pencils.

Closure
1. Explain that the museum activities will add to the story of Ancestral Puebloan family life. Encourage the students to look in the Main Gallery and on the trail for some of the things mentioned in the story.
2. Have groups move with the group leaders to their first learning stations or as a class to the movie theater to view a designated video.

Extensions

Coloring the Picture

In the *Family Life* picture, have students color the artifacts they see during their field trip. They may also label objects with correct terms, such as mano and metate, and sketch additional artifacts not already in the image as they move through the Main Gallery.

Assessment

Behavior: Group leaders report about each student's attentiveness during the story.

Writing a story: Back in the classroom, use the *Family Life* story as a model for composition. Have students write and illustrate a story or scene about a family, possibly their own, living in Ancestral Puebloan times. Assess the story for details about artifacts and ideas presented during your field trip. The story can become a research project where students use in-class references for additional artifact descriptions and as additional story models. (A few student references are listed at the end of this lesson.) The story also could be incorporated into a skit or play that students share with another class or in an assembly.

Teacher's Background Information

Family Life is written as an introduction to your field trip. Much of the information and ideas presented in the museum and in future curriculum activities are focused on one aspect of ancient life or archaeology. To students, these ideas can be abstract and seem unrelated. The *Family Life* story and picture provide a holistic image to which the vocabulary, details, and ideas can be connected as students complete the *Gallery Walk* or *Ancient Neighbors* tour.

There are only a few vocabulary words in the story. The descriptions are presented in simple terms so that students can easily imagine the scene. They can learn later that the cornmeal grinding stones in the story are called manos and metates and that the underground room is called a kiva.

The picture on the student notebook page of *Family Life* works well as a cover for a larger notebook containing all the activities for your field trip.

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Marriott, Alice
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1990 *Village of Blue Stone*. Simon and Schuster Books for Young Readers, New York, NY.

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2000 *Intrigue of the Past: Discovering Archaeology in Colorado*. Bureau of Land Management, Heritage Education Program.

Family Life: Listening to How People Lived

Activity Summary and Instructions

- *Read the following story at the beginning of the field trip after the class has been welcomed to the Anasazi Heritage Center and the rules for visiting have been reviewed.*

Read to the Students:

Everyone please sit quietly in the plaza while I read the following story. If you like, you may either close your eyes to imagine the story or look at the pictures on your notebook page. The story is about Dominguez Pueblo in front of the museum building.

Let's travel back more than 800 years to the time when an Ancestral Puebloan family lived in the Dominguez farmhouse and traded up at the Escalante community center.

You are coming home from gathering firewood with a heavy bundle on your back. In your mouth is one of the piñon nuts that you enjoy chewing while walking home through the forest.

Smell the juniper smoke coming from the fire pit in the plaza in front of your stone house. Your mother and older sister are cooking a meal of corn, beans, squash, and perhaps a bit of meat. Extra pots full of water from the nearby river sit close to the fire pit. They have the symbols of your family and the Escalante community painted on them.

Can you hear the sounds of stones grinding cornmeal and the quiet laughter of your grandmother? Your father and uncle are singing in an underground room. They are weaving blankets out of yucca fiber and turkey feathers while they sing.

Away from the plaza, your older brother prepares his bow to hunt for a feast. Can you see your grandfather teasing him about when he will get his first deer? Your aunt is repairing the plaster on your house.

Your youngest cousin and his dog run by you chasing turkeys around the plaza. The turkeys are used for food and clothing. His playful shouts and giggles fill everyone with joy.

Off in the distant plain, you can see other houses similar to yours surrounded by farm fields. Friends and family live in these homes. You are excited because tonight you will see many of these favorite people during the festival at the great house on the hill.

Read to the Students (Closure):

Open your eyes (or put down your pictures) and look at me. The activities you will be doing and the things that you see will add to the story of what life was like for the Ancestral Puebloans who lived at Dominguez and Escalante. You will learn about the methods archaeologists use to study ancient people and places and how they help us tell this story. Let's see how many of the things mentioned in the story are displayed in the Main Gallery and on the trail to Escalante.

Vocabulary

Use as a reference if students are unfamiliar with terms or have questions. The teacher has likely reviewed these terms before the field trip.

Ancestral Puebloan - name given to the farming people who lived all over the Southwest in ancient times, including the Escalante and Dominguez Pueblos. Formerly known as the Anasazi, they are the ancestors of many southwestern Pueblo groups of today, including the Hopi, Zuni, and Tewa of the Rio Grande Valley.

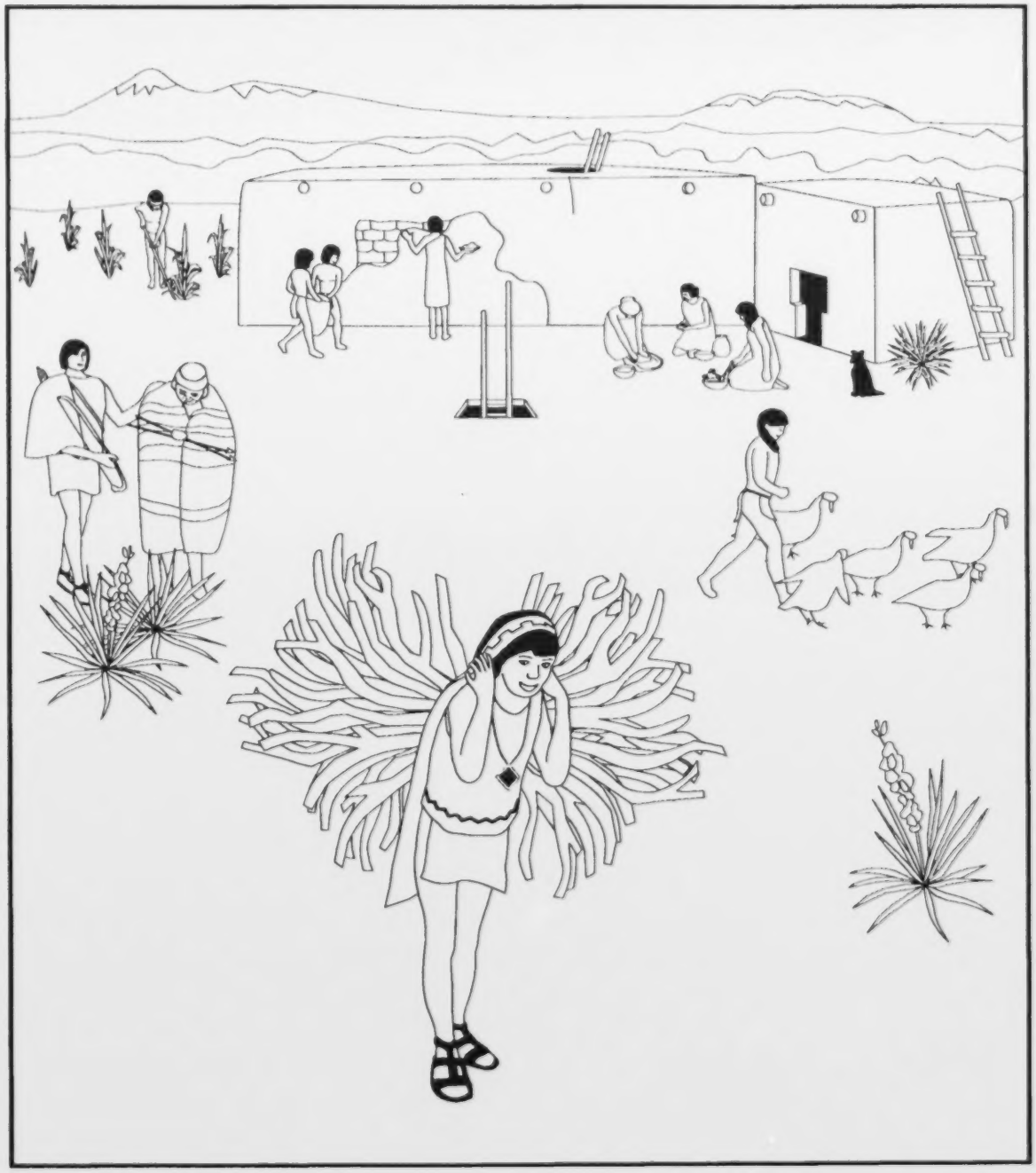
juniper - an evergreen tree or shrub with scales instead of needles, and berries instead of cones.

pinon - a pine tree that grows in the desert southwest at about 5,000–7,000 ft. elevation. It has short needles and produces a large, edible nut considered a nutritious delicacy.

plaza - an open area on top of or between buildings and houses where community activities occur.

yucca - a plant that grows to about 2 ft. tall with long, spike-like green leaves clustered around a taller flower stalk that reaches several feet in height.

Family Life: Listening to How People Lived



Gallery Walk: Learning from the Main Gallery Exhibits

SUBJECTS: Social Studies, Science, Art, Language Arts, Reading
SKILLS: Cognitive—knowledge, comprehension, application
Affective—receiving, responding, valuing
Psychomotor—perceiving (listening, observing, touching), physical action (walking, grinding)
DURATION: 1 hour minimum

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—1,2,4,5 Science—1,5,6
Math—1
Visual Arts—1,3,4
History—1,3,4
Geography—2,3,6

Activity Summary
Guided by their notebooks, students visit the Main Gallery of the Anasazi Heritage Center. They view and interact with the exhibits to answer questions in their notebooks. Student responses include drawing, writing short answers, grinding corn, weaving, touching artifacts, and imagining life in ancient times.

Materials
- *Gallery Walk* student notebook for each student and group leader
- *Gallery Walk* group leader instructions
- *Junior Archaeologist Pledge* card for each student
- Clipboards (available at the AHC)
- Pencils

Objectives
Students will be able to
1. Explain why archaeology and the protection of cultural resources are important.
2. Describe or draw a picture of family life of the Northern San Juan Ancestral Puebloans, including how some artifacts were used.
3. Demonstrate their ability to use certain archaeological research tools, such as a microscope, tree ring chart, or computer.
4. Explain several steps used in the science of archaeology.

Vocabulary
analysis
Ancestral Puebloan
archaeology/archaeologist
artifact
cataloging
conservation
context
culture
curation
excavated
hypothesis
inquiry
interpretation
kiva
mano
metate
Northern San Juan people
pithouse
pueblo
strata

Helpful Hints

This activity works well immediately following *Family Life*, but it can be used at any time during the field trip. To help the activity move along, group leaders can ask the questions aloud and record the answers. Students complete only the drawings in their notebooks and copy all written answers later on the bus or in the classroom.

Also, to make the pledge cards more durable (and realistic), you may want to copy page 13 on card stock before your visit.

Procedure

Place
Begin at the entrance to the Main Gallery, and move throughout the room by following the directions in the student notebook and the gallery map.

Activity
1. Group leaders explain to their students that they will move through the gallery to learn about the Ancestral Puebloans. They will also learn about the science of archaeology, which studies ancient people.
2. Students view and participate in the interactive exhibits and answer questions in their notebooks as a cooperative group or team.

Closure
Ask your group leaders (or museum docent, if available) to lead the Anasazi Heritage Center's *Junior Archaeologist Pledge* with students. If time is limited, or a more formal presentation is planned, you may wish to conduct this ceremony back in the classroom.

Extensions

Artifacts Past and Present
Have students list five of their favorite artifacts seen during the *Gallery Walk*. Brainstorm modern equivalents, and list those next to each favorite gallery artifact. For example, a yucca sandal might be a tennis shoe, or a ceramic storage jar could be a metal lunch box.

Artifact Life History
Have students chose one favorite artifact from the gallery to research. Students find out the object's construction materials, how the artifact was made, how it was used, and how it was discarded. This can be compared to the life history of a modern equivalent artifact (see above).

To Do Before Your Trip!

Be sure to make enough *Junior Archaeologist Pledge* cards for the whole class.

Assessment

Behavior: Group leaders report on student attentiveness and participation in discussion.

Notebook review: In the classroom, have students work in groups to complete any unanswered questions from the *Gallery Walk*. Have students exchange notebooks with members of another group. Most questions can be answered appropriately in various ways. Review each question as a class and discuss all possible answers.

Archaeological essay: Ask students to answer a guiding question in a group report that uses their *Gallery Walk* notebooks and some of the suggested references at the end of the lesson plan. Possible report questions are

- Why is it important to help conserve archaeological sites and ancient artifacts?
- Which activity would you pick to do if you were an Ancestral Puebloan? Why?
- What would it be like to live with your family in a pithouse? Why?
- Would you like to be an archaeologist who uses research tools and works to protect archaeological sites? Why?

Group reports could then be compiled into a class essay.

Teacher's Background Information

The Anasazi Heritage Center (AHC) opened in 1988 and was built as an interpretive center and a repository for objects and information from the Dolores Archaeological Program. Since that time, its mission has broadened to include interpreting all cultures, past and present, from the Northern San Juan region. The center manages artifact collections and records for archaeological sites from southwest Colorado. In the summer of 2000, the Anasazi Heritage Center also became the visitor information and interpretation center for the Canyons of the Ancients National Monument.

The museum's Main Gallery is focused on Northern San Juan Ancestral Puebloan culture and on archaeology. It was designed to be educational for all ages. Because children can be overwhelmed by the new sights and sounds of the museum, the *Gallery Walk* organizes information along a general theme of Ancestral Puebloan family life. The questions in the student notebook often relate to family roles, yet also explain the use and meaning of specific artifacts. This helps students imagine themselves living in ancient times and generates an interest and understanding about artifacts.

Students also experience some processes used by archaeologists in research. This direct experience generates interest and enthusiasm about archaeology and its important role in decoding the past. This enthusiasm is then guided to understanding archaeological site conservation through the *Junior Archaeologist Pledge*.

Anasazi Heritage Center
Junior Archaeologist Pledge

I promise to:
- Treat archaeological sites with respect.
- Leave all artifacts where I find them.
- Walk between, not on, ancient walls.
- Explore rock art with only my eyes.
- Teach others what I have learned.

I will do these things to:
- Help preserve archaeological sites for future study.
- Honor the sites as sacred places for Pueblo people.

I will remember:

"It's not what you find, it's what you find out."
by David Hurst Thomas

Student

Teacher / group leader / docent Date

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Junior Archaeologist Pledge

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Gallery Walk: Learning from the Main Gallery Exhibits

Activity Summary and Instructions

- *Instructions appear in italics; read the rest of the text to students.*
- *Start at the entrance to the Main Gallery, then proceed left.*
- *The instructions on how to move clockwise around the building appear in brackets in the student notebook. Refer to the gallery map on page 16 for stop locations.*
- *Encourage the students to work as a team while completing their questions.*
- *Take a copy of the student notebook for yourself to track students' progress and to read the instructions.*
- *Check with the teacher to see whether you will distribute the* Junior Archaeologist Pledge *cards on site or back in the classroom.*
- *Vocabulary words appear in bold type when first used in the student notebook and are defined on page 17.*

Read to the Students:

We will be guided through the Main Gallery of the Anasazi Heritage Center by the *Gallery Walk* student notebooks. You will need to look at and participate in the interactive exhibits in order to answer the questions in your notebook. Let's work together as a team to answer the questions.

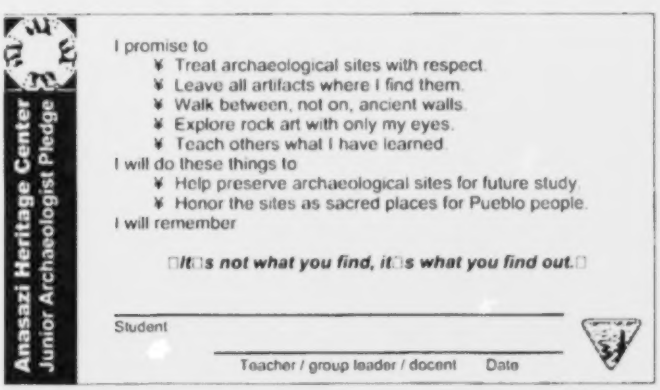
First, on the big plastic map at the entrance to the gallery, find the place where the **Northern San Juan Ancestral Puebloan** people lived. Then we will follow the directions in our student notebooks to walk through the gallery.

Closure:

Pass out the Junior Archaeologist Pledge *cards and have students recite the pledge aloud. If you prefer, a museum docent may be available to lead the pledge.*

Read to the Students:

Congratulations! You have completed the *Gallery Walk* and learned many new things about archaeology and the Ancestral Puebloans. We will now take the Anasazi Heritage Center's *Junior Archaeologist Pledge* and receive our junior archaeologist card. Repeat after me:


Anasazi Heritage Center
Junior Archaeologist Pledge
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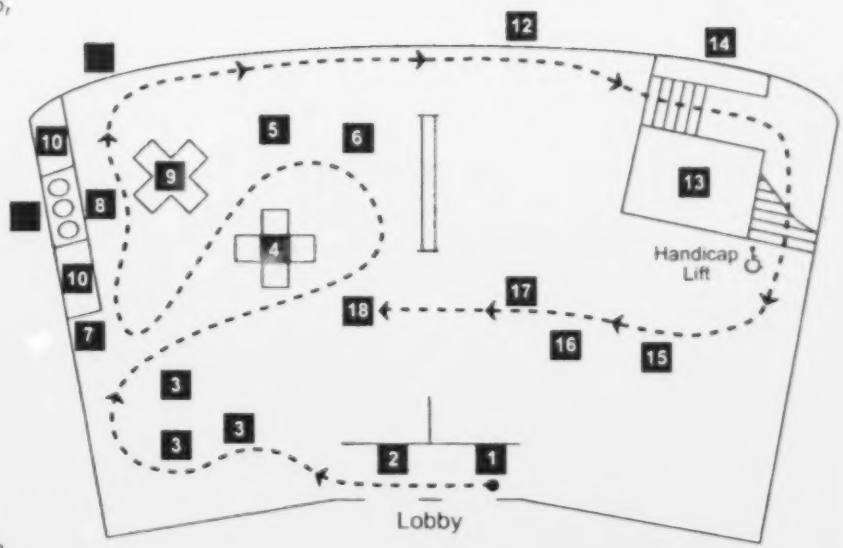
¥ Explore rock art with only my eyes.
¥ Teach others what I have learned.
I will do these things to
¥ Help preserve archaeological sites for future study.
¥ Honor the sites as sacred places for Pueblo people.
I will remember
□It□s not what you find, it□s what you find out.□
Student
Teacher / group leader / docent Date

Sample of the Junior Archaeologist Card

Anasazi Heritage Center
Main Gallery Exhibits

1. Northern San Juan Ancestral Puebloans (map)
2. The Ancestral Puebloan Family
3. Duckfoot Site
4. Microscopes
5. Trees Tell Time
6. Experimental Archaeology
7. Weaving
8. Corn Grinding
9. *People in the Past* Computer Exhibit
10. Discovery Drawers
11. Traditional Hopi Story in Photos
12. Seasonal Calendar
13. Pithouse
14. Test Trench Model
15. Food Preparation
16. Farming Tools and Clothing
17. Hunting
18. Interpretation, Cataloging, Conservation, and Storage



Vocabulary

Use this as a reference if students are unfamiliar with any of the terms during and after the walk.

analysis - the careful study of artifacts and other clues found during survey and excavation of an archaeological inquiry or investigation.

Ancestral Puebloan - name given to the farming people who lived all over the Southwest in ancient times, including the Escalante and Dominguez Pueblos. Formerly known as the Anasazi, they are the ancestors of many southwestern Pueblo groups of today, including the Hopi, Zuni, and Tewa of the Rio Grande Valley.

archaeology/archaeologist - a science that involves the study of past human cultures by analyzing material evidence (artifacts and sites). Archaeologists are scientists who study archaeology.

artifact - any object made or used by humans.

cataloging - recording into a computer system or on card catalogs all of the original context of an artifact and where it can be found in storage.

conservation - cleaning and repairing artifacts during curation.

context - the relationship artifacts have to each other and the situation in which they are found.

culture - a set of learned beliefs, values, behaviors, and tools shared by members of a society.

curation - the longest stage of archaeology. It involves cataloging artifacts like books in a library; cleaning and repairing artifacts (conservation); and storing artifacts carefully so they do not disintegrate over time. Curation occurs so that artifacts can be studied and displayed at museums for future generations.

excavated - that which has been dug up from the ground or earth.

hypothesis - an explanation that can be tested by further investigation, observation, and experimentation.

inquiry - a systematic investigation using a few scientific methods to reach a conclusion.

interpretation - translating scientific information into common, everyday language and explaining scientific ideas in an easy to understand way.

kiva - a room with distinctive features, usually underground, and used as a social community room, political decision-making center, and/or religious ceremonial area.

mano - a small stone held in one's hand used to grind corn and other substances by rubbing on a larger stone called a metate.

metate - a large stone used to grind corn and other substances by rubbing with a small stone (mano).

Northern San Juan people - Ancestral Puebloans who occupied the Four Corners region, including the Great Sage Plain, the Mesa Verde, and the Dolores River Valley.

pithouse or pit structure - a room built partially underground and entered through a hole in the roof or by an entry room that slopes to the surface. Early pit structures, prior to A.D 700, are thought to be one room houses. Later in time, specialized ceremonial pit structures were built near surface living and storage rooms (see "kiva"). Many pit structures functioned both as ceremonial and living rooms.

pueblo - a Spanish word meaning "town," "city," or "village." In the southwest United States, pueblo is a village of apartment-style buildings usually made out of adobe (sun-baked bricks) or stone masonry. Pueblo is also used to refer to the Native American people who live in the pueblo villages.

strata - layers of earth.

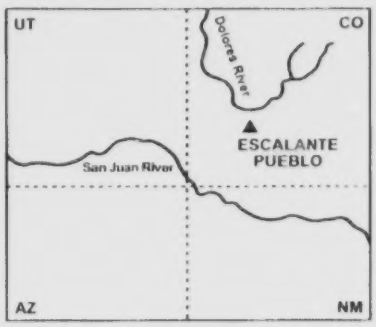
Gallery Walk: Learning from the Main Gallery Exhibits

Name:_____

Your instructions for where to look or walk to find the next display are presented in brackets [ ]. Vocabulary words appear in bold type when first mentioned. If you are not sure what a word means, ask your group leader.

1 THE NORTHERN SAN JUAN ANCESTRAL PUEBLOANS

[Stand at the door of the Main Gallery, and look at the large plastic map hanging from the ceiling.]



Can you find the San Juan River?

YES / NO

This **culture** or living style was located mainly north of that river. Find where this group of people lived until the late 1300s on the big map of the Four Corners region. Circle that area on this map.

2 THE ANCESTRAL PUEBLOAN FAMILY

[Look at the large, free-standing images of people near the door.]

Compare yourself and your family to these life-size **Ancestral Puebloan** people.

Are they taller or shorter than the people in your family?

Shorter/ Taller

What kind of animals did they have?

1._____

2._____

3 DUCKFOOT SITE

[Turn left to enter the gallery, and stop at the first glass-covered display case.]

Draw a picture of the ceramic duck feet in the display case. These are **artifacts**, objects that were made and used by people.

Archaeologists excavated a whole village as part of a scientific **inquiry**. They named this village after these two unusual artifacts found there. Some people say the artifacts look like duck feet. What do you think they might have been when Ancestral Puebloans made them?

?_____

Would it be easier for you to answer if you knew where the feet were found? YES / NO

Could you better imagine the whole artifact if you could see the rest of the pieces? YES / NO

Since these feet were moved from their original place before being studied, we do not know what they really were. Like other scientists, archaeologists ask questions, suggest answers, and gather evidence to see if their ideas are correct. They study the "**context**" of an artifact to decide what the artifact is. The context of an artifact refers to where it is found in a site and to what artifacts are located nearby. It's like figuring out an unfamiliar word by looking at the words on the page around it. In excavation, the context of the artifact is carefully sketched onto a map and recorded in writing before it is removed from the ground.

Remember:

IT'S NOT WHAT YOU FIND, IT'S WHAT YOU FIND OUT!

David Hurst Thomas

[Walk to your left around the Duck Foot Display cases.]

Look in the "Open Me" drawer. What is your favorite artifact in here?

?_____

What did the context of this artifact reveal about WHAT it is, WHEN it was made, HOW it was used, or WHO used it? Read the answers to these What, When, How, and Who questions by lifting up the object and reading the words underneath it.

Now, open the drawer labeled "Look Inside." This sketch has artifacts in their original room arrangement. Based on the variety and location of the artifacts found in this room, how did the people use this space?

?_____

Notice that one artifact was taken out of context or stolen. How does that make you feel?

?_____

When this occurs in an archaeological site, part of the story about the artifact and site is lost. If you find an artifact while walking in a natural area, leave it in place!

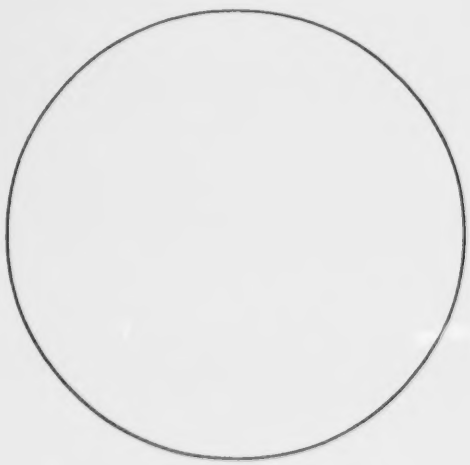
4 MICROSCOPES

[Walk past the Duckfoot Site display panel to find the microscopes.]

After the context of artifacts is recorded in a scientific inquiry, they are excavated and taken to the lab for analysis. ***Analysis*** is the careful study of artifacts and other site clues within a controlled, scientific setting. You will learn more about a few analysis techniques.

[Sit at a station, place one of the small cases under the microscope, and look through the eyepiece. Each case is different. Focus with the round knob at the side of the microscope until you can read the small words in the case about what to study. DO NOT unscrew the eyepieces.]

Small clues and artifacts are analyzed under microscopes.



Sketch and label the most interesting discovery you make.

5 TREES TELL TIME

[Find the Trees Tell Time display next to the microscopes.]

One way scientists analyze the age of buildings is by studying the growth rings in the wood support beams. Read the explanation about tree ring dating on the display. Now, try to match the lines on the wood column with the dating chart lines, and circle the year the tree was cut down.

1700 1950 1985

6 EXPERIMENTAL ARCHAEOLOGY

[Find Experimental Archaeology kiosk next to the Trees Tell Time display.]

Scientists use experimental archaeology to analyze tools. They try to recreate ancient tools and then use them. What is the archaeologist making in the display video?

?_____

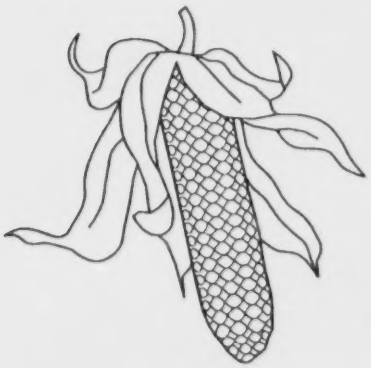
7 WEAVING

[Walk to the weaving loom against the wall.]

Many ancient artifacts are similar to modern artifacts.

Ancestral Puebloan men probably wove the cloth. Today men weave traditional garments in their **pueblos**. Navajo women weave rugs for sale and trade. These crafts people are very important in keeping the traditional skills alive. We also learn from them how these crafts might have been made in ancient times.

Try your hand at weaving! The instructions are in the book at the loom. Ask your group leader or at the front desk if you need help.



8 CORN GRINDING

[Go to your right.]

Corn is considered sacred to Pueblo people today. It nurtures and sustains the people. Grinding corn with stones, called **mano** and **metate**, takes many hours. It is part of the training for Pueblo girls to become women.

Take a turn at grinding corn with a mano and metate. Put your knees on the edge of the ledge. Use your arms and body weight to grind back and forth. PLEASE DO NOT POUND.

How much corn can YOU grind into fine meal in 1 minute? Time yourself; then measure by putting the cornmeal into your hand.

A Pinch? A Hand Full? Two Hands Full?

Here's a question for you to figure out:
It takes three ears of ground corn to make one corn cake. Your family needs to store enough ground corn to make 1,000 corn cakes during the winter. How many ears of corn would you need to grind?

?_____

9 PEOPLE IN THE PAST COMPUTER EXHIBIT

[Turn around to find the computer nearest the loom.]

Find the corn grinding story on the computer program called the *People in the Past*. Be patient and listen to the Pueblo Elder, Esther Martinez. Listen for the songs sung while the women grind corn.

[Click on MM or Main Menu, then Program Excerpts, Corn Grinding, Present, and T for Text. Ask your group leader or at the front desk if you cannot find the right place.]

10 DISCOVERY DRAWERS

[Move to the Discovery Drawers next to the corn grinding area.]

Explore the drawers. Be very careful with these artifacts. Many are more than 1,000 years old.

List an artifact below that you especially like and tell why.

?_____

11 TRADITIONAL HOPI STORY IN PHOTOS

[Look at the BIG wall photos. Start on the wall above the corn grinding bins and continue to your right.]

One hundred years ago, the Hopi in Arizona still lived much like the Ancestral Puebloans did over 800 years ago.

See if you can find and check off the following details in the BIG photos on the wall:

1. Manos and metates ___
2. Baskets made by a Hopi woman ___
3. Ladders for climbing to rooftops ___
4. Hoe used to cultivate corn ___
5. Butterfly or squash blossom hairdo worn by young Hopi maidens ___
6. Tumpline head strap used to carry heavy loads home from the field ___

12 SEASONAL CALENDAR

[Follow the backwall to the right to find the circular chart.]

Hopi and other Pueblo people live in villages or towns in Arizona and New Mexico. Like all of us, they live a mixture of modern and traditional lifestyles. Continuing traditions include farming corn, beans, and squash, and doing ceremonial dances. People return to this region every year to honor their ancestors and the places they lived.

What Tewa Pueblo activities may be happening this time of year?

?_____

What traditional things does your family do that are the same as what people did over a hundred years ago?

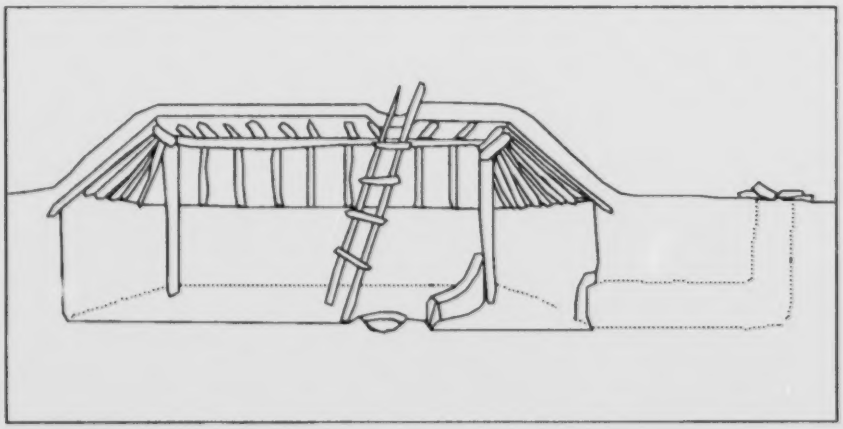
?_____

13 PITHOUSE

[Follow the stairway into the pithouse.]

This **pithouse** is a model of one excavated or uncovered in the Dolores River Valley before it was filled with water and became McPhee Reservoir. Imagine that this pithouse had a flat roof on top that was nearly level with the ground.

Now, look at the picture of a pithouse.



Circle the following things on the picture by studying the display signs and the model pithouse, and by using your imagination:

1. doorway
2. fresh air vent shaft
3. a place to hang things
4. indoor cold storage (hint: look near the fresh air vent shaft)
5. sleeping area
6. cooking area
7. fireplace
8. storytelling area

In early times (A.D. 600s), pithouses were the only living areas built by Ancestral Puebloan families. Later, aboveground living and storage rooms were built to the north of the pithouse. The pithouse remained the most important living and ceremonial room, especially in the cold winter months, because it was very warm and needed only a small fire in the winter. The smoke from the fire rose through an opening in the roof. Today pithouses are often called **kivas**.

Pithouses were only one part of the Ancestral Puebloan living area. The rooftop, outdoor plaza, and nearby fields were all part of their homes as well. Stand quietly for a minute and imagine the pithouse as it looked when people lived in it. Can you picture yourself living here? What kinds of chores do you think the children did for the family in this indoor/outdoor home?

?_____

_____

_____

14 TEST TRENCH MODEL

[Turn around, and look at the wall opposite the pithouse.]

Through time, layers of dust, dirt, and artifacts build up on top of one another. These layers, or **strata**, filled in the pithouse after the Ancestral Puebloans moved out. Archaeologists dig test trenches to reveal strata that may contain artifacts. This test trench looks like the real one that archaeologists used to investigate the original pithouse. Look at the items found in each layer of soil.

Which level do you think is the oldest?

Top / Bottom

Can you see the edge of the pithouse on the trench wall where it creates a cup-shaped reddish outline?

1. Draw this outline.

2. Make a simple drawing of the fill layers, or strata, from the bottom up.

3. Draw a picture of a modern artifact that you see at the top.

4. Draw a picture of an ancient artifact that you see near the floor.

15 FOOD PREPARATION

[Walk up the steps. To your right, you will find displays about the everyday activities of the Ancestral Puebloans. Look above the cases for banners of Ancestral Puebloans using the artifacts. Go to the food preparation case first.]

The women of the family probably prepared most of the food eaten by the Ancestral Puebloans. Find these cooking tools in the display case:

1. a fire starter
2. grinding stones
3. sifting basket
4. cooking pot with smoke stains

These foods are from the Pueblo tradition. Many go back thousands of years. Circle those you have eaten.

tamales corn bread dandelion greens deer jerky chili
hominy stew (posole or menudo) sunflower seeds piñon nuts

The most commonly found cooking artifacts are clay pots. Their shape and painted designs represent specific groups of people at specific times in history. Some designs are family symbols still used by Pueblo people today. Sketch your favorite pot or mug on display.

[See the display called *Hopi Clan Symbols* for more pottery designs.]

16 FARMING TOOLS AND CLOTHES

[Look for the cases below the farming and clothesmaking banner.]

While browsing the farming tools, imagine a time when all of your food was home grown or gathered from nature. Does your family grow some of your own food now? If yes, what?

?_____

Now look at the sewing tools, and clothes. Imagine a time when most of the things of daily life were handmade by a friend, relative, or by yourself. All of these things were very special because they could not be easily replaced. They also contained the memories of those who made them. Each item would be carefully saved and, at times, recycled.

Can you find the piece of jewelry, or pendant, that was recycled out of a broken piece of pottery?

Make a sketch of the pendant or your favorite piece of clothing.

Describe outloud to your group something that was given to you by a relative or handmade by a friend that is special to you now.

17 HUNTING

[Find the exhibit case on hunting near the corner of the pithouse. Look above it for the banner of the man hunting.]

Hunting was a very important task for men and boys. It allowed them to prove their physical abilities, and it provided good food for their families.

Find the spear-throwing tool. What is it called?

?_____

What animals do you think the men and boys hunted?

deer rabbit bighorn sheep elk bear turkeys

18 CURATION

[Walk around the Hopi Clan Symbols *display case. Find the kiosk labeled Interpretation, Cataloging, Conservation, and Storage on the top signs.]*

After archaeologists do research on various aspects of ancient artifacts and the people who used them, they write a report about what they learned and turn in their artifacts to a museum or **curation** facility for safekeeping. Curation occurs so that artifacts can be studied or displayed forever into the future.

Curation is the longest stage of archaeology. Read the ***Interpretation, Cataloging, and Conservation*** panels to be able to match each curation activity with its definition:

Curation Activity:
Interpretation = _____ Conservation = _____ Cataloging = _____

Definition:

A. Artifacts and reports are labeled, assigned a number, and systematically shelved so as to be found by future researchers, much like books in a library.

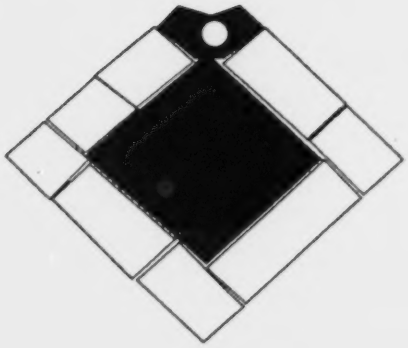
B. Presents information about an artifact in a book, video, or display.

C. Cleaning, reparation, and packaging of artifacts to prevent disintegration over time.

There are over 3 million artifacts in curation at the Anasazi Heritage Center!

Look at the *Conservation* panel pictures. Now, look up into the glass case. Can you see the real pendant from Escalante Pueblo that was repaired in the Anasazi Heritage Center's curation lab?

YES / NO



Congratulations! You have now completed the *Gallery Walk* student notebook. Please repeat the *Junior Archaeologist Pledge*, and receive your junior archaeologist card.

Junior Archaeologist Pledge:

I promise to

- Treat archaeological sites with respect.
- Leave all artifacts where I find them.
- Walk between, not on, ancient walls.
- Explore rock art with only my eyes.
- Teach others what I have learned.

I will do these things to

- Help preserve archaeological sites for future study.
- Honor the sites as sacred places for Pueblo people.

I will remember

"It's not what you find, it's what you find out."

by David Hurst Thomas

Ancient Neighbors: Touring Dominguez and Escalante Sites

SUBJECTS: Social Studies, Science, Reading, Art, Language Arts
SKILLS: Cognitive—knowledge, comprehension, analysis, synthesis
Affective—receiving, responding, valuing
Psychomotor—perceptual (seeing, touching), physical (walking)
DURATION: 35 min. of activity minimum & walking time of 20-30 min.

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—1,2,4
Visual Arts—1,4
History—2,3,4
Geography—1,2,3,4,5,6
Math—1
Science—5

Activity Summary
Students learn about the Dominguez and Escalante Pueblos as they walk by and through the sites. They complete student notebook questions that compare the two sites and relate them to their own houses. After viewing Escalante artifacts and photos, they visualize a time when the artifacts and sites were used by Ancestral Puebloans.

Objectives
Students will be able to
1. Understand why archaeology and archaeological site protection are important.
2. Describe some of the cultural traits associated with the Northern San Juan Ancestral Puebloans at Dominguez and Escalante Pueblos.
3. Explain possible relationships between the people of the Dominguez and Escalante Pueblos.
4. Picture daily life at Dominguez and Escalante at the time of their occupation.
5. Appreciate the science of archaeology and Pueblo culture.

Materials
- *Ancient Neighbors* student notebook for each student
- *Ancient Neighbors* group leader instructions and map
- Escalante artifact photos (available at the AHC)
- Escalante artifact kit—optional (available at the AHC)
- Clipboards (available at the AHC)
- Pencils

Vocabulary
Ancestral Puebloan
awls
black-on-white pottery
check dam
culture
dryland farming
Great Sage Plain
grinding stone
kiva
Northern San Juan people
petroglyphs
pilasters
sherd
terrace
T-shaped doorway

Helpful Hint

If your students are slow writers or if you are short on time, have the group leader read the tour at each stop and complete the student notebook questions orally with the group. Students can then complete their notebooks as a classroom review or assessment.

Procedure

Place
Start at the plaza in front of the museum; then walk the nature trail to the Escalante Pueblo, one-half mile from the Anasazi Heritage Center.

Activity
1. Have the group leader pick up the Escalante artifact photos and optional artifact kit at the front desk. Please return them immediately following the tour.
2. The group leader reads the tour narrative on the *Ancient Neighbors* group leader sheet and guides students on a walk to Escalante. Stops are designated first in the plaza and then at Dominguez and Escalante Pueblos.
3. Students answer questions in the *Ancient Neighbors* student notebooks during the tour. The instructions in brackets on the group leader sheets indicate when to pause for notebook questions.
4. At the end of the tour, students go to assigned rooms in Escalante and look at specific artifact photos. They read about the artifacts on the backs of the cards. Guided by their notebooks, students imagine people using the artifacts in ancient times. They list the artifacts in their notebooks. Students can study real artifacts if the group chooses to carry the Escalante artifact kit on the tour.

Extensions

Compare Escalante with Other Sites
Visit other Northern San Juan village sites, such as those of Hovenweep or Mesa Verde. Compare the sites in a T-chart (see student notebook for example).

Conservation Art
Have students study a decorated ceramic sherd from the Escalante artifact kit, or look at a sherd in context at another site. Have them sketch the sherd and record context information about where it was found and what it was before being broken. Later in the museum or classroom, students can reproduce the exact sherd design on thick leather, clay, or cardboard. Leather pieces painted with white shoe polish and black markers make excellent black-on-white replicas. Attach a magnet to the back of each replica so it can be placed on a refrigerator, or put a string through a hole at one end to be able to hang it. Put the artifact information on the back with tape or on a paper frame around the sherd replica. Emphasize that there are ways to observe, record, and remember the beautiful artifacts seen at a site without taking them and destroying their context.

Closure
At the shade ramada or back in the plaza, the group leader encourages students to share what their artifact was and how they imagined it being used. A brief discussion is held about artifacts and site conservation on public land. If time allows, students can sketch their favorite part of the Escalante site. Each group should write down at least one new question to ask at the museum or to research later in class.

Assessment
Behavior: Group leaders report on student attentiveness and participation in discussions.

Student notebook: Assess the student notebook for completeness appropriate to grade level.

Draw a living pueblo: Students sketch what Escalante or Dominguez might have looked like in ancient times. Assess drawings for artifact and activity details discussed on the tour.

Escalante classroom essay: Students answer a question related to the tour using what they remember about the tour, their notebooks, and books from the Anasazi Heritage Center Library or Museum Shop. Recommended books include *Cities in the Sand; Stones, Bones, and Petroglyphs;* or *Indians of the Four Corners*. Possible essay questions include

- Why is it important to protect ancient sites?
- How was your Escalante artifact used in ancient times?
- How might the neighbors in the Dominguez and Escalante sites have interacted with each other?
- What archaeological methods can be used to discover ancient lifeways?

Assess answers for details from both the tour and references.

Teacher's Background Information
Ancient Neighbors focuses on what life was like at Escalante and Dominguez Pueblos. It contains information derived from archaeological research. Yet, the history of rediscovery and archaeological investigation at the sites is not addressed. The history is presented below, along with some archaeological details. Share this information with your students as appropriate.

Historic records reveal that several groups of explorers visited and described this hilltop and the surrounding area. In 1776, the Dominguez and Escalante expedition camped at the big bend in the river valley below the hill and named the Dolores River. A journal belonging to Fray Silvestre Velez Escalante tells how he climbed a hill on the south side of the river to gain a better perspective of where the expedition was heading. While on this hilltop, Fray Escalante noticed a "small settlement" from ancient times similar to those the expedition had seen in northern New Mexico. J.S. Newberry of the Macomb expedition (1859) and explorer W.H. Holmes (1876) mentioned in their journals sites in the same geographic area.

In 1917, archaeologist Jesse Walter Fewkes, assisted by local Forest Service ranger J. Ward Emerson, retraced the Dominguez-Escalante journey in southwest Colorado. They visited the hill by the bend in the Dolores River and observed the rubble of building stones, wall alignments, and kiva depressions. Fewkes named the site "Escalante Ruin."

Today, Pueblo people find the word *ruin* offensive. These structures are still regarded as pueblos inhabited by the spirits of their ancestors.

It wasn't until the 1970s that Fewkes's Escalante site received more archaeological attention. The University of Colorado conducted a field school and officially recorded Escalante along with the Dominguez Pueblo at the base of the hill. They stabilized the standing walls and published a report, which was primarily the result of two masters' theses on the excavations. The sites were opened to the public by the Bureau of Land Management as part of the 1976 American Bicentennial Celebration.

The field school conclusions described Escalante as a "Chacoan outlier or great house." Chaco Canyon is a famous Ancestral Puebloan settlement area in northern New Mexico. The reasons for calling Escalante a Chacoan outlier are mostly based on similar architectural features like core-veneer masonry, concentrated room blocks with an enclosed central kiva, and overall large size (particularly height) of rooms. Escalante was built in the twelfth century, a time when other "great houses" were built in the Four Corners region.

One of the more intriguing results of the 1970s excavation was that Dominguez, the smaller site, was found to be contemporary with Escalante. Yet, its architecture is more typical of the Northern San Juan culture, with only a few small, connected room blocks, single course walls, and a detached kiva on the south side of the site.

Today, Crow Canyon Archaeological Center in Cortez, Colorado, is studying the pattern of settlements in the region. Their initial data suggest that in the mid-1100s there were large community centers located every few miles on the Great Sage Plain. Escalante is on the edge of this plain. Community centers, like Escalante, were surrounded by many small, single-family residences and farm fields. The community centers have some archaeological features that resemble those found in Chaco, yet they remain distinct from true Chaco sites in many ways. This research implies that the sites are special places in the Northern San Juan culture, not just Chacoan outliers.

Crow Canyon researchers have also established that people left the Escalante area and a few other community centers on the eastern part of the Great Sage Plain before A.D. 1200. The people either left the region or joined larger community centers, such as Sand Canyon Pueblo in the heart of the Great Sage Plain. All of these changes took place before the final emigration from the region by 1300.

Who were the inhabitants of the two different sites of Escalante and Dominguez, and how did they interact? Was it all one big community on the hillside? Did Escalante compete with or dominate the smaller site? Was Escalante constructed by locals mimicking a building style from Chaco Canyon? Or, was it built by someone from outside the area? Did it function as a trading center, religious destination, or political point of foreign control? These questions leave much to ponder.

Escalante and Dominguez are valuable archaeological resources that should be studied and protected for future research. They are also an important part of the Pueblo peoples' identity. The sites are recognized as ancient historical landmarks and shrines for contemporary Native Americans.

Since the opening of the Anasazi Heritage Center in 1988, the important role of the sites as educational tools for visitors, teachers, and students of all ages has increased. The ancient walls and artifacts remind us to listen respectfully to the lessons from the rich cultural heritage of one people who lived here before us.

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Ancient Neighbors: Touring Dominguez and Escalante Sites

Activity Summary and Instructions

- *Instructions appear in italics; read the rest of the text to students.*
- *Before you begin, pick up the Escalante artifact photo set and the Escalante artifact kit (optional) at the front desk of the museum.*
- *Read the narrative below to the students at each stop, beginning in front of the museum and working your way up the nature trail to Escalante.*
- *The instructions in brackets indicate when students are to complete sections of their notebooks. If students are not doing the paperwork during the tour, skip these instructions.*
- *The boldface words are defined in the vocabulary, which follows the tour narrative. Refer to these as needed on the tour.*
- *Maps of both the Escalante and Dominguez Pueblos appear on page 34.*

Read to the Students:

I will share information about the Dominguez and Escalante Pueblos as we take our walk today. We will discuss and answer questions in your *Ancient Neighbors* student notebooks as we go along. We will also look at artifact photos and real artifacts while at Escalante. I need a couple of volunteers to carry the photos and artifacts. Please help me to remember to return the photos and kit to the front desk, or give them to the next group right after our tour.

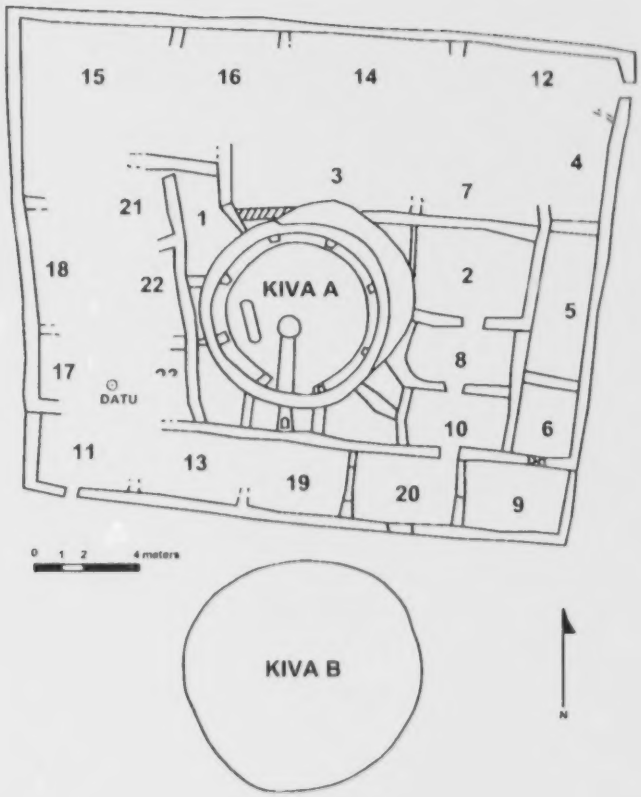
Also, I need to share a couple of important rules and reminders:

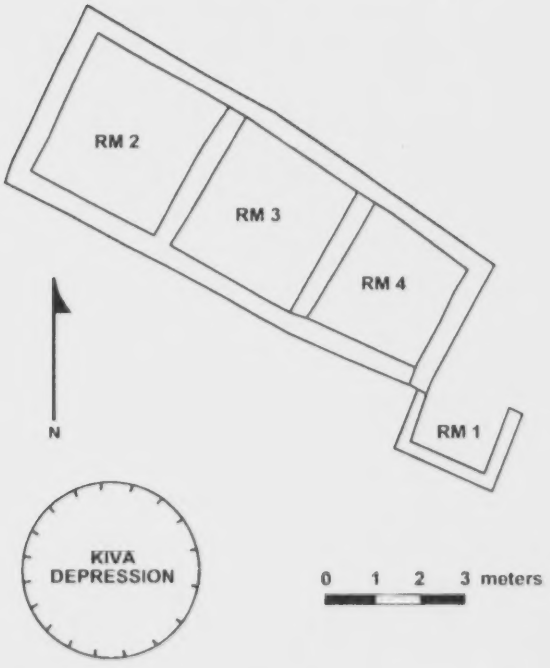
- Be alert for snakes [during warm weather]. If you see a snake, back away from it slowly and tell me immediately.

- At Escalante, we may go off of the paved trail to look into the rooms, but we must **stay off ancient site walls and out of the kiva. Any artifacts we see must be left in place.** Do not dig in the site or pick at the walls.

Following these rules will protect the site for future study and for other visitors. All archaeological sites on public land are protected by federal law. Please show respect when visiting these areas.

Map of Escalante Pueblo





Map of Dominguez Pueblo

Stop 1. Begin in the plaza, and look at the landscape

Imagine that it is 850 years ago. Scattered throughout the **Great Sage Plain** to the south and west were farms—lots of farms! Most of the farms you now see have archaeological sites on them. There were also farms scattered across the countryside in ancient times. The population of this area may have been almost the same as it is today, about 20,000 people. All the **Ancestral Puebloans** of this region shared a lifestyle or **culture** that we now call Mesa Verde, or **Northern San Juan**. Evidence of this lifestyle still remains in archaeological sites that have **black-on-white pottery** pieces and half-standing stone walls.

But why should we care about these ancient people? Why are there strict laws to protect ancient sites? In North America, there is no written history prior to the arrival of the Spanish. Research at ancient sites is one of the main ways we learn about the past. We also listen to the oral stories of today's Pueblo people for some ideas about ancient life. The stories and scientific reports help us to understand how people survived, thought, and felt long ago. They present alternative lifeways that we might otherwise not imagine—things to think about and appreciate in our own effort to be better people.

For example, the Ancestral Puebloans and people today share the challenges of a dry climate and a rugged landscape. **Dry farming** today uses methods similar to the Ancestral Puebloan methods, yet farmers using irrigation farm quite differently. What are the results of both ways? Which way will be more successful in the long run? Perhaps archaeology can help answer those questions.

Think about your own living style or culture as you learn about these ancient people. As you go on the tour, listen for something from ancient times that may influence your life.

[Now, answer the first question and make a sketch in your student notebook of an artifact that identifies your own culture or lifestyle.]

Stop 2. Look at the small Dominguez Pueblo in front of the museum

The Dominguez Pueblo is an example of a typical family home of 850 years ago. Most of the **Northern San Juan people** lived in small houses like this. The extended family of grandparents, aunts, uncles, and maybe cousins lived nearby. Can you see the four storage and living rooms? In front of those rooms—to the south—imagine a round, deep, underground room covered with a flat roof. This was the **kiva**—a community and ceremonial room. After archaeologists excavated this room, its earthen walls were fragile because there was no roof for protection. So, it was filled back in with dirt to preserve it. Imagine fields of corn, beans, and squash nearby waiting to be harvested. Not far away, imagine many other family farms. Now, imagine that you and your family lived here. How would your life be different in that time than it is now in the twenty-first century?

[Complete your notebook section about the Dominguez Pueblo.]

Stop 3. Stand on the landscape viewing platform at the end of the paved path near Escalante

Turn south so you are facing Sleeping Ute Mountain. Slowly turn to the west (clockwise) to see the Abajo Mountains, then north to see the Dolores Peaks and Wilson Mountain, then east to the La Plata Mountains. Then turn south to Mesa Verde. You have just made a visual circle along the boundary of the ancient Northern San Juan cultural region where thousands of people once shared the same lifestyle.

Escalante Pueblo was probably a community center for the surrounding area of family farms. People lived here, and others came for trade, seasonal ceremonies, and to hear news from around the region.

From this high point, they had a clear view of the sun and the moon rising and setting on the horizon. They could mark the seasons and special days like the summer and winter solstices. Spiral **petroglyphs** were found on some of the Escalante building stones. Spirals such as these are part of solar calendars in other ancient pueblos. Could that be true here, too?

People could also see herds of deer, as well as incoming and outgoing travelers. Visitors could see the hilltop village from far away as they traveled to Escalante to celebrate or trade. This was very important in a time when there were few trails and no road maps.

Higher elevations in this area receive more rainfall. Rainfall was important for the Escalante people and the surrounding family farms since the closest source of water was the river down the hill. A **check dam** for catching rain runoff and possibly a **terrace** garden was located where the museum is now.

[Answer the question in your notebook on what you would like most about living on a hilltop.]

Stop 4. Go back to the viewing platform next to Escalante

Can you tell where the site is unexcavated? Much of it blends naturally with the hill. The best way to preserve sites for future research is to leave them buried. It is also considered more respectful to the ancient inhabitants to leave a place as untouched as much as possible.

Look at the excavated portions where partial stone walls are visible. How is this site different from Dominguez Pueblo? Notice that the rooms are bigger, the walls are thicker, and the whole building is a different shape, a square village with a kiva in the middle. This same pattern is found at many community centers of the 1100s.

[Compare the Dominguez site with the Escalante site on the T-chart in your notebook.]

The large size and sturdy construction suggest that this building was important— just like well-made business centers and churches in modern times. Its location and thick walls also made Escalante more defensible from the elements and invaders. Other sites in the region display evidence of warfare or violent conflict in this time period, but not Escalante and Dominguez. As a precaution, however, Escalante residents may have been protective anyway.

Stop 5. Look into Rooms 5 and 6

Many storage jar fragments, animal bones, and hunting tools were found in these rooms, but there was little evidence of corn. Since there were no fire circles or signs of corn processing, these rooms were probably not living or working rooms, but specialized storage rooms.

More storage rooms were at Escalante than at Dominguez. Why do you think this occurred?

While you are looking at Rooms 5 and 6, imagine big ladders coming out of the holes in the roofs in ancient times. There were no other doors to the outside of the building. This helped keep mice and other intruders out of the valuables and food stored here.

People moved in and out of Escalante three times. Can you see the evidence of remodeling that was done on the doorway between Room 9 and Room 6?

Look into Rooms 10, 8, and 2

These were likely living rooms since they contained firepits for cooking and heating and there were many **grinding stones** for corn on the rooftops. There were interior **T-shaped doorways** that connected the rooms.

Each family had only one or two living rooms of this size. The Ancestral Puebloans spent most of their time outdoors on the rooftops and in the pueblo plaza cooking, grinding corn, making tools, and carrying out their daily chores. They also spent time in the fields around the pueblo tending crops and hunting. They didn't need very large inside rooms. Family members must have had to be patient and cooperative on cold winter days when they couldn't go outside.

These living rooms showed evidence of tool making and use. They contained arrow shaft straighteners, pottery fragments shaped into tools or jewelry, bone weaving tools, sewing **awls**, hammer stones, rubbing stones, pigment grinding stones, hide scrapers, polishing tools, and flakes from making arrow points. Were the residents specialized craftsmen? Was this place for tool production? We can only speculate.

[Walk onto the unexcavated portion of the site next to the kiva.]

Stop 6. Look into the kiva while staying behind the straight wall framing the room

The kiva at this site is larger and much better made than the one at Dominguez. It originally had a wooden domed roof that arched up and over from the stone **pilasters** seen on the outer stone wall bench. It could be entered only by ladders through a hole in the roof. Kivas were probably used to meet, trade, and hold celebrations. Since the kiva is large at this site, archaeologists think that more of these kinds of activities took place here than at Dominguez.

The round pit was the fireplace, used for cooking, lighting, and providing heat in colder months. The rectangular pit on the floor is called a foot drum. Imagine hearing feet tap out a rhythm on wood planks that echoed through the community announcing a ceremony or a trade event.

Surrounding the kiva on three sides are unexcavated rooms that make a mound on the hilltop. The second kiva is not excavated and looks like a natural pit with plants growing in it. It is outside and just south of the main building and was built during the second occupation of Escalante. These rooms have been purposely left unexcavated for future archaeologists—maybe you and your classmates! Future investigation techniques may reveal more information while disturbing the site less.

Closure
Exploring Escalante

Let's take a closer look at the rooms. I will give each group member an Escalante room number, photo card, and artifact (Rooms 2, 5, 6, 8, 9, 10, 20, kiva). I want you to look at these rooms and their artifacts. Find your assigned room on the Escalante map and walk to that room. Look at the photos of artifacts found in that room and read the information on the back of the cards. Imagine these artifacts being used by real people in this exact place in ancient times. Imagine, also, your own family living here long ago—laughing, playing, and working to take care of each other. Would they enjoy this beautiful view?

[List your artifacts in your notebook. If time allows, sketch your favorite part of the site in your notebook. Also, write one new question that may be asked back at the Anasazi Heritage Center front desk or researched in your classroom.]

Vocabulary
Use these for reference if students are unfamiliar with the terms.

Ancestral Puebloan - name given to the farming people who lived all over the Southwest in ancient times, including the Escalante and Dominguez Pueblos. Formerly known as the Anasazi, they are the ancestors of many southwestern Pueblo groups of today, including the Hopi, Zuni, and Tewa of the Rio Grande Valley.

awl - a long, pointed tool, usually made of bone, that is used for puncturing or drilling holes in leather or other materials.

black-on-white pottery - a type of ceramic pottery that is decorated with black designs over a white background. It is found in abundance in the Northern San Juan prehistoric cultural region.

check dam - a line of stones stacked 1–2 ft. high to block a small wash, create a small pool of water, and accumulate fertile sediments.

culture - a set of learned beliefs, values, behaviors, and tools shared by members of a society.

dry farming - farming without an irrigation system other than capture of local rain runoff. This requires planting that utilizes moisture-conserving tillage and drought-resistant crops and is also in sync with the natural weather cycle.

Great Sage Plain - land that is bounded by the Dolores River Valley, the La Plata Mountains, Mesa Verde, Sleeping Ute Mountain, and the Abajo Mountains.

grinding stone - a piece of stone that was used to grind seeds, corn kernels, or paint pigments, or to sand or polish wood or stone objects.

kiva - a room with distinctive features, usually underground, and used as a social community room, political decision-making center, and/or religious ceremonial area.

Northern San Juan people - Ancestral Puebloans who occupied the Four Corners region, including the Great Sage Plain, the Mesa Verde, and the Dolores River Valley.

petroglyphs - ancient or historical, pictorial or geometric, designs that are pecked into a smooth stone surface.

pilaster - a rock base or pier that sets out from the wall and supports the ceiling or a kiva.

sherd - a piece of a ceramic artifact, usually from a bowl or jar. A bowl sherd may have decoration and designs on the outside and inside, while a jar will have designs only on the outside.

T-shaped doorway - doorways shaped like a T that are found in Ancestral Puebloan buildings, most often in interior locations. There are many practical theories to explain the shape, including (1) the wideness on the top allowed for someone with a bundle to enter, and (2) the small part on the bottom was left uncovered for circulation.

terrace - land arranged in levels to prevent erosion and to trap and hold available moisture.

Ancient Neighbors: Touring Dominguez and Escalante Sites

Name:_____

Listen and look around as the group leader shares information at each stop. Then answer the questions and follow the instructions below.

Stop 1 **In the Anasazi Heritage Center plaza**

Think about your own lifestyle and how it differs from that of the Ancestral Puebloans. Why do you think archaeology is important?

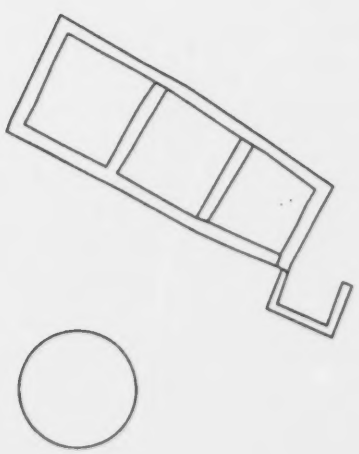
?_____

_____

_____

_____

Draw an artifact that represents your own lifestyle or culture.



Stop 2 **At the Dominguez Pueblo**

Pretend that you and your family live here.
On the Dominguez map, write the following symbols where you might do these activities:

E = Eat dinner
P = Play with friends
T = Make tools, crafts
H = Do homework
S = Sleep
C = Cook
M = Listen to music

Dominguez Pueblo might have been crowded if the people did all of these activities indoors. Actually, they did many of them outside in the pueblo plaza, on the roof, or out in the fields.

Stop 3 **Look toward the mountains and the mesas**

What would you like the most about living on this hill?

?_____

_____

_____

Stop 4 **On the platform looking at Escalante**

Compare the Dominguez Pueblo with the Escalante Pueblo in the T-chart below.

	Escalante Pueblo	Dominguez Pueblo
Example:	Thick exterior walls	Thin walls

Make a sketch of your favorite part of Escalante Pueblo.

Exploring Escalante

DO NOT STEP ON THE WALLS !

Find your assigned room on the Escalante map and walk to that room. Look at the artifact photos found in that room. Read the information on the back of the cards. Imagine these artifacts being used by real people in this exact place in ancient times. List your artifact below and how it was used.

?_____

_____

Write down one new question about Escalante or Dominguez to ask at the front desk or to research on your own later.

?_____

_____

_____

II. Pueblo Culture

Corn Is Life
A Sense of Place

II. Pueblo Culture - Experiencing the Lifeways of a People

They come from all sides, these words and songs of ancestors.
Ramson Lomatewama, Hopi Poet

Introduction

The Spaniards labeled communities with the Spanish name "pueblo" when they visited masonry villages inhabited by descendants of the Ancestral Puebloans in the mid-1500s. Since that time, the word *pueblo* has gained several meanings: a style of building, periods in time, a group of people who traditionally live in pueblo buildings. The pueblo time periods start around A.D. 700, when the Ancestral Puebloans began to build homes of stone or adobe masonry. Their traditions and lifestyle are called Pueblo culture.

Pueblo structures similar to Escalante and Dominguez are found throughout the Four Corners region and were lived in for several centuries. Pueblo villages housed extended family groups. Community life took precedence over individual concerns. The people entered rooms via ladders placed through roof holes or by small doorways. Fires burned in open hearths in the rooms and outside in ovens or roasting pits. The villages had plazas—open areas where people worked, children played, and community events were held. Villages often contained one underground room now called a pithouse or kiva, a combination community gathering place and ceremonial room. Nearby the crops of corn, beans, and squash were dryland farmed with minimal irrigation. Agriculture, especially the growing of corn, was a central focus of the Pueblo people; it provided their staples for survival and was most likely the central focus of their religion. The landscape, with a variety of resources, was important as well. Trade and social journeys across the landscape connected people from pueblo to pueblo and region to region.

The old villages are not considered "ruins" by the contemporary Pueblo people, but an important legacy that connects the past, present, myth, and memory. Pueblo people speak with great respect about their ancestors and believe that their spirits still live in the ancient pueblos. These places hold the memory of how ancestral people lived their lives long ago. Stories are found in the pottery, stone tools, roof beams, and plazas. Traditional lifeways are rekindled in contemporary villages with the replanting of multicolored corn and the birth of each Puebloan child. Pueblo villages thrive in New Mexico and Arizona today.

The lessons of *Pueblo Culture* encourage students to step outside the fast-paced technological life of the twenty-first century to experience cultural perspectives that have endured for centuries. Religion, economy, community, and environment—all are integral to the Pueblo culture. Because one small set of activities can barely begin to touch on all of these aspects, we have focused the following two lessons on perspectives central to Pueblo people—the importance of corn and the land.

Corn Is Life: A Weave of Religion, Economy, and Community

SUBJECTS: Social Studies, Science, Reading, Language Arts
SKILLS: Cognitive—knowledge, comprehension, application
Affective—responding, valuing
Psychomotor—physical (manipulation of cloth and string)
DURATION: 30–40 minutes

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—2,4,6
History—3,6
Geography—2,4,5,6
Science—(extensions) 1,2,3,6

Activity Summary
Students view the video *Hopi: Corn Is Life*, make seed bundles, and create a group planting poem that expresses appreciation for corn.

Objectives
Students will be able to
1. Describe why Ancestral Puebloans viewed corn as important in their lives.
2. Explain a symbolic meaning of corn in Pueblo culture.
3. Demonstrate respect for seeds as Native American heirlooms and containers of life.

Materials
- *Corn Is Life* student notebook for each student
- *Corn Is Life* group leader instructions
- *Hopi: Corn Is Life* video (AHC)
- *Hopi Corn Maiden* poster (AHC)
- Seed jar (AHC)
- Planting stick (AHC)
- Native corn seeds (AHC)
- 4" cloth square and 6" string for each student
- Seasonal Calendar poster (AHC)
- Clipboards (AHC)
- Pencils

Vocabulary

Corn Maidens	native seeds
dry farming	planting stick
heirloom	seed jar

Helpful Hint

The seed bundle is easy to make—even by first graders—when children work in pairs. Group leaders can better demonstrate making the seed bundle if they practice before the field trip. The corn poem can be completed quickly at the museum with clear group leadership. It also can be done back in the classroom under the teacher's direction.

Procedure

Place
Auditorium and multiuse room, or AHC plaza; closure can be done in the museum or in the classroom.

Activity
1. In small groups or as a class, students view the video titled *Hopi: Corn Is Life*.
2. Group leaders assemble small groups of students in a circle on the floor in the multiuse room or in the plaza to briefly discuss the film. The students talk about what corn means to the Hopi people and look at the Corn Maidens poster and the Seasonal Calendar poster. They discuss what activities the Tewa Pueblo people could be doing during this time of the year related to farming.
3. One by one, the group leaders pass around the planting stick, cloth squares, and seed jar so that students can touch them. Students take a few seeds and a piece of cloth. Group leaders will also need to provide a piece of string for each student. Students are told to treat the seed jar and the seeds with respect.
4. While students are holding their corn, the group leader reads the two poems on the *Corn Is Life* group leader sheet.
5. The group leader demonstrates how to make a seed bundle. Working in pairs, the students complete their seed bundles.

Closure
If time allows, the group leader facilitates the creation of a group poem. Each student makes a statement that describes corn, how it grows, or what he or she likes about it. The group leader writes each contribution in the poem outline on the group leader sheet, and then reads the entire poem aloud to the group. Students may copy the poem into their notebooks on-site or write their own poems later.

Extensions
Corn Poems: Have students create and illustrate a class booklet of their corn poems. The booklet can also include their favorite recipes using corn or corn products.

Plant a Garden: Experiment with dryland farming by planting a school garden. Complete instructions appear on an activity sheet called *Dryland Farming with Pueblo Strategies,* which can also be handed out for students to try at home. Check with the museum educator for more information on this extension.

Hopi Terraces: Experiment with water and soil conservation using Hopi-style terraces in a sandbox. Complete instructions appear on an activity sheet called *Water and Soil Conservation in Hopi Terraces.* Check with the museum educator for more information on this extension.

Making Dragonflies: Read aloud the Zuni story retold in the book *The Boy Who Made Dragonfly,* by Tony Hillerman. Follow up by making corn husk dragonflies. A museum docent may be available to tell this story and help students make dragonflies at the museum. Check with the museum educator for more information on this extension.

Read about Corn: Read aloud *Corn Is Maize*, by Aliki. Older students can read *Kokopelli's Flute* by Will Hobbs. Both books contain information about corn and other native plant cultivation.

Assessment
Behavior: The group leader will report informally on student participation and attitude during the activity.

Student notebook: Students can trade notebooks and assess each other's group or individual poem for completeness, depth of ideas, and artistry.

Essay: Have students write a brief essay to answer the following questions:
- Why is corn an important part of Pueblo people's lives?
- What is one symbolic meaning of corn to Pueblo people?
- How do Hopi Pueblo people show their honor and respect to corn?

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Teacher's Background Information

Archaeological findings suggest that corn was a central focus in life for the Ancestral Puebloans of the Four Corners region. Throughout the region, including at Escalante Pueblo, Pueblo people devoted considerable time to cultivating corn in a sustainable and meaningful way.

Corn is a descendant of Teosinte grass, a wild plant from Mexico. Corn has been cultivated for 5,000 years. Farming and storing corn allowed people to settle year-round in one place, rather than to move constantly to find wild sources of food.

The Ancestral Puebloans experimented with their farming techniques by planting in sand dunes, washes, and fields. Each location had advantages and disadvantages, depending on the frequency and intensity of summer rain and flash floods, temperature, and subsurface moisture. Digging sticks and hoes were designed to protect the vital top layer of soil needed to prevent erosion and retain moisture.

Today, Pueblo people in the Southwest continue to cultivate corn. They prepare for planting in February. By May, some planting may begin, but seeds are not sown until all danger of frost is past. The emerging plants are protected from rabbits, insects, and birds, and occasionally are hand watered. At maturity (about 120 days), the corn is harvested and celebrated by the community.

After harvesting, the corn is dried on the flat roofs of the pueblo and stacked and stored. Some is set aside for the following year in case of crop failure. Certain seeds are chosen and stored for the next year's planting. Thus, the seeds become heirlooms passed through generations of successful harvests. The rest of the corn kernels are removed from the husk to be used for food. Some corn is still ground into flour using mano and metate stones for ceremonial reasons. Modern mills grind much of the harvest. Cornmeal is used to make different kinds of bread, dumplings, soups, and breakfast cereals. Cornmeal is also used for blessings and purification.

Like the contemporary Pueblo people, we assume Ancestral Puebloans understood that corn was the basis for their life. A rich tapestry of religious and community life likely revolved around the planting, protection, and care of corn in ancient times. Corn became a symbol of fertility, motherhood, health, and virtue. Prayers, songs, and offerings encouraged rain, bountiful harvest, and the well-being of plants and animals. These ancient traditions persist today. Growing and caring for corn and other plants was and is a reciprocal partnership with nature. It provides food for the body, mind, and spirit.

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Corn Is Life: A Weave of Religion, Economy, and Community

Activity Summary and Instructions

- *Instructions appear in italics; read the rest of the text to the students.*
- *View the video* Hopi: Corn Is Life *in the theater; then go to the multiuse room or to the plaza to make a seed pouch and write a corn poem.*
- *All of the materials, seed pouch items, planting stick, Corn Maidens Poster, and Seasonal Calendar, will already be at the activity area (either the plaza or the multiuse room).*

Read to the students (in the theater, after seeing the video):

The video *Hopi: Corn Is Life* shows you the importance of corn to Pueblo people of today. Since the Hopi people believe they are descendants of the Ancestral Puebloans, their traditions are thought to be similar. This video is an example of what may have been. While we walk to our next activity, think about why corn is important to the Hopi people.

Go to the plaza or multiuse room. Have students hold and display the Hopi Corn Maidens poster and Seasonal Calendar as you read:

1. Corn is important in Pueblo people's lives. It is a traditional food that once was relied upon for survival. Corn was also important in religious activities. These ladies are called the Corn Maidens. They are symbols of corn's spirit. Corn is thought to be a spiritual mother or guardian. Since corn is sacred, it is sometimes used for blessings. This is a Seasonal Calendar of the Tewa Pueblo people in New Mexico. Archaeologists think it is similar to the Ancestral Puebloan seasonal calendar. Notice how half of the year is devoted to farming tasks and ceremonies. What time of year is it now? What kind of activities might be taking place at the Tewa pueblos?
2. Next, I will pass around the planting stick. The planting stick is a tool used by ancient people and farmers of today to push seeds into the soil without disturbing the surrounding earth that holds the winter and spring moisture. The underground moisture is needed to germinate seeds and keep them moist until the summer rains soak the ground.
3. As I pass around the seed jar, take a few of each different kind of seed and treat them with respect. Hold them in your hand and imagine that your whole life depended on them. If carefully planted and tended, they will grow into big plants that provide the food needed for your survival. These **native seeds** are Pueblo **heirlooms**, special things passed down from one generation of farmers to another. Also take a cloth square and some string that you will use to make a seed bundle. Native American farmers save some seeds from each harvest in seed jars or pouches for planting the following year. In the past, small pouches full of special seeds could be carried long distances for ceremonies and trade.

Read the following poem while students pass around the seed jar or hold the seeds in their hand:

Song to the Breeze

When you whisper
to four-color corn,
they laugh.
You make them laugh.

We walk among
corn children,
caressing tender
young leaves.

We help corn maidens
tease the ground,
tickle the earth
when their leaves,
green and slender,
stroke the
sleeping sand.
Sand laughs
and swirls away.
You help the sand run
away.

You watch me laugh
when I hear them laugh.
My song to you is
filled with laughter.

Can you hear the song?
Do you feel the song?
Can you hear?
Can you hear?

Drifting through Ancestor Dreams, Ramson Lomatewama, Hopi Pueblo

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Read this poem as students listen quietly: (It is a model of what the students will create.)

Susan Moore, a museum teacher, wrote this poem while imagining that she was an Ancestral Puebloan.

Corn...

Mother of my people

Corn...

Planted in the spring when the ground is soft

Corn...

Watered by the clouds in the summer sun

Corn...

Celebrated at the Corn Dance

Corn...

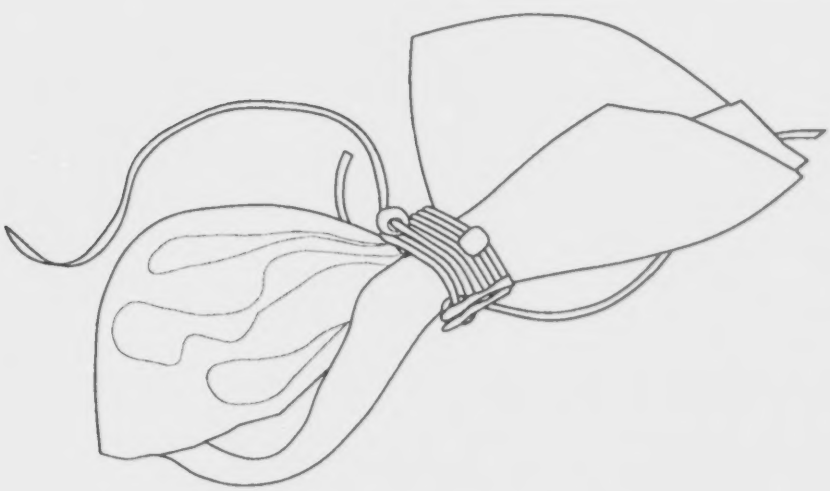
Nurtured by my people through the growing season.

Corn...

Precious giver of life.

Read these instructions and then demonstrate making a seed pouch:

Set your seeds down while you prepare the cloth for your seed bundle. Make an open fist like a cup. Lay the cotton cloth over your open hand with your free hand, and use a finger to push the middle of the cloth down to make a pouch. Place the seeds into the pouch with the free hand. Tighten the thumb and forefinger around the top to close the pouch. With your free hand, wrap a piece of string, rafia, or cornhusk around the pinched cloth and tie a knot. It will probably be helpful to work with a partner.



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Read to the students for closure:

Let's imagine that we are Ancestral Puebloans creating a song or poem to use at the time of planting. Each of you will say something that describes corn, how it is used, or what you like about it. I will write each of your thoughts in the poem outline of my notebook. If you like, you can write the poem in your own notebook as well. You can also make up your own poem later on. When we are done, I will read the whole poem aloud.

Corn...

_____

Corn...

_____

Corn...

_____

Corn...

_____

Corn...

_____

Add more lines as needed. Read aloud all of the lines of the community corn poem when done.

Vocabulary
Use the following list as a reference for this activity.

Corn Maidens - symbols of the nurturing spirit of corn; two female spirit-like beings with squash blossom hairdos and abstract faces. Similar is the Corn Mother of some Pueblo groups.

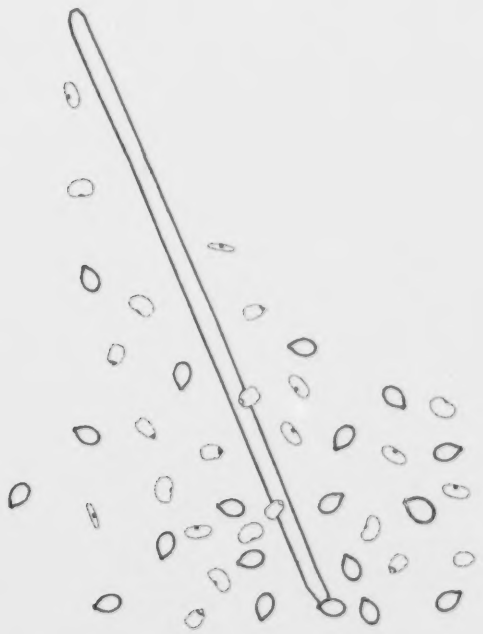
dry farming - farming that takes place in regions that receive little water and use no irrigation.

heirloom - an object of special value that is handed down from one generation to another.

native seeds - seeds from plants that were cultivated and used in a local region over a very long period of time.

planting stick - a special stick about 2–4 ft. long that is smoothed and rounded on the ends and sometimes sculpted and decorated. It is used for pushing seeds deep into the ground so as not to disturb the surrounding soil.

seed jar - a special ceramic storage container for keeping seeds for future planting.



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Corn Is Life: A Weave of Religion, Economy, and Community

Name:_____

While Pueblo people are planting, they sing songs or say poems to encourage the plants to grow. Listen to your group leader read a poem by Ramson Lomatewama from the Hopi Pueblo.

After you make your seed bundle, think about what words you might say as you plant your seeds. Susan Moore, a museum teacher, made up this poem from the point of view of an Ancestral Puebloan.

Corn...
Mother of my people
Corn...
Planted in the spring when the ground is soft
Corn...
Watered by the clouds in the summer sun
Corn...
Celebrated at the Corn Dance
Corn...
Nurtured by my people through the growing season.
Corn...
Precious giver of life.

Let's pretend that we are Ancestral Puebloans creating a song or poem to use at planting time. Say one thing about corn, and your group leader will write it in a poem outline. You can copy it later. Make a statement that describes corn, how it is used, or how you feel about it.

Corn...
_____

Corn...
_____

Corn...
_____

Corn...
_____

Corn...
_____

Corn...
_____

After all the group members have said something about corn, your leader will read the poem aloud. Later you may write your own poem about corn and planting.

A Sense of Place: Perceiving the Landscape

SUBJECTS: Geography, Social Studies, Language Arts, Math
SKILLS: Cognitive—comprehension, application, synthesis
Affective—receiving, responding, valuing
Psychomotor—perceptual (observation)
DURATION: 35 minutes minimum

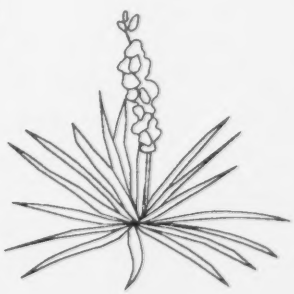
COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—1,2,4,5
Math—(extension) 1,5
Visual Arts—(extension)1
Music—(extensions 1,3,5)
History—3,4,6
Geography—1,2,6

Activity Summary
Students observe and sense the landscape. They give directions for travel from their school to the Anasazi Heritage Center using a map and then natural landmarks. They explore the relationship that the Ancestral Puebloans may have had with their special places and homeland and compare that with their own experience.

Objectives
Students will be able to
1. Recognize that the environment influences human identity and economy.
2. Compare modern and ancient ways of navigating across the landscape.
3. Appreciate the local landscape.
4. Identify their own homeland or special place.

Materials
- *A Sense of Place* student notebook for each student
- *A Sense of Place* group leader instructions
- Clipboards (AHC)
- Pencils
- Road map and landscape model in AHC lobby

Vocabulary
identity
natural landmark
natural resources



Helpful Hints

If your school is farther than Durango, Farmington, Cortez, or Monticello from the Anasazi Heritage Center, this activity works best with a regional or state road map.

Procedure

Place
The landscape model in the museum lobby or the landscape signs at the Escalante site and overlook.

Activity
1. The group leader reads the introduction from the group leader sheet. Students work in small groups to write directions in their notebook for traveling from their school to the Anasazi Heritage Center.
2. Students estimate how long it may have taken Ancestral Puebloans to travel the same distance.
3. Students list natural resources they noticed on the drive that ancient people may have used during a long journey.
4. Students answer the questions about favorite places and their "homeland" in their notebooks.
5. Students answer the questions about landscape and identity.
6. The group leader reads *Imagine 800 Years Ago* from the group leader instructions while students look at the landscape. Then students give directions on how to travel from their school to the Anasazi Heritage Center using only the natural landmarks that existed in ancient times.

Extensions

Singing the Landscape: Students create a song about the Escalante landscape. A docent may be available to lead the activity at the museum. Check with the museum educator for more information on this extension.

Telling the Ute Mountain Story: Have students memorize the Sleeping Ute legend and tell it to their family or friends. They can illustrate it in their notebook or on a larger piece of paper. A docent may be available to lead the activity at the museum. Check with the museum educator for more information on this extension.

Calculating Travel Time: After your field trip, your students can more accurately calculate the time that an Ancestral Puebloan needed to travel to Escalante from your school. Check with the museum educator for more information on this extension.

Closure

During the activity or back at school, students compare the directions they wrote using a modern map to the directions they made using natural landmarks. They discuss their favorite places and why they are important.

Assessment

Behavior: The group leader will report informally on student participation and attitude during the activity.

Student notebook: Students can trade notebooks and evaluate each other's answers for completeness while the teacher is discussing the answers in the classroom.

Teacher's Background Information

A sense of place is a familiarity with the community and land, a feeling for the surroundings, and an understanding of the effect of the environment on who we are and how we live. A sense of place is part of a strong personal identity and a commitment to a homeland. It is an understanding of our effect on an area and what is right for it. Within this awareness, the landscape takes on a deeper significance—one that includes economic, historic, religious, and aesthetic dimensions.

Traditional stories preserve a mystical connection to place. They create an understanding and reverence for how people and place are related. They reveal landforms that are spiritually alive and interact with the plants, animals, and people who live within them. All are part of the larger community.

In ancient times, a sense of place was likely strong in people. Escalante Pueblo was in a region with a sedentary farming culture. The local environment sculpted the community and culture. Many generations living in the same area and relying on local natural resources created an intimacy between people and the land. Their definition of home likely went far beyond a family's shelter to include the plants, animals, and landscape; theirs was a true home land.

Traders played an important role in ancient America. They connected people, places, and things in fluid and dynamic ways. Escalante was likely a trade center, based on the many excavated trade items found in the rooms. The traders learned the lay of the land through direct experience, step-by-step over a long distance. In a time without any remote communication systems, printed media, or rapid transportation, these foot travelers distributed goods, resources, news, and ideas about how to live. They knew the stories of the people and of the land along the way. Their linked oral narratives created a mental geo-historical map. They contributed to a broad sense of place across a region.

In contemporary living, people are increasingly unaware of the places where they live and move through. The disconnection grows from individual independence, social mobility, and modern socioeconomic systems. Few people live in an area longer than three to four years. We do not know the land's history or its lessons. In addition, we rarely venture "outside" to gather or grow our resources. We simply go to markets and purchase goods of unknown origins and discard the remains to unknown destinations. Consequently, many of us remain little more than passing visitors in places, and we are unaware of our impact on a community and landscape. Often, we do not know the land's history and lessons.

Although we cannot know exactly how the people of Escalante Pueblo wove their world together, we can perhaps acquire a glimpse by entering the same landscape for a time. *A Sense of Place* is an invitation to perceive the land through Pueblo eyes. Simon Ortiz, a poet from Acoma Pueblo, suggests that "land and people are interdependent, they are one and cannot be separated. Without land there is no life." These activities encourage students to connect with their environment, if only for a little while. They are challenged to develop their own sense of place and try to answer the questions, Where am I?, How did I get here?, and What does the land mean to me?

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A Sense of Place: Perceiving the Landscape

Activity Summary and Instructions

- *In this activity, you will lead students in giving directions on how to come to the Anasazi Heritage Center from their school using both modern and ancient reference points. They explore the relationship that the Ancestral Puebloans had with special places or homeland and compare that with their own.*
- *Pick up the road map for the activity at the museum front desk before you begin.*
- *To begin, gather students in the lobby around the landscape model or around the road map.*
- *Instructions appear in italics; read the rest of the text to the students.*

Read to the students (Introduction):

This activity compares how modern and ancient people move across the land and think about landscape. It helps you to imagine what the daily activities at Escalante Pueblo were like since a lot of people were coming and going from this trade or ceremonial center. Observing and sensing the landscape around you is important to remembering who you are, where you have been, and where you are going.

Read to the students. Briefly discuss each question before having students write their answers:

1. To get started, point out where we are, right now, on the landscape model (or on the road map). Trace with your finger the route we took from the school to the Anasazi Heritage Center. Record the route in your notebook. Write your description as if you are giving directions for someone else to find his or her way here. Use modern place names, highway numbers, and building names.
2. Ancestral Puebloans probably did not travel as far or as frequently as travelers do today. They had no cars or horses and had many responsibilities close to home. If Ancestral Puebloan traders traveled the same distance as we did today coming from our school to the Anasazi Heritage Center, how long do you think it took them? Write your answer in your notebook.
3. Ancestral Puebloans relied on the **natural resources** in their area both while traveling and at home. What natural resources did you notice on the drive here that ancient people could use while traveling?
4. Ancestral Puebloans lived in the same area for most of their lives and rarely traveled far. They were familiar with their homeland. In ancient times, familiarity was needed to survive off the land's resources. Living in a place through time also built up memories of life events and created a feeling of security. Landmarks had related stories that instructed the people, and certain places were sacred. Describe a favorite place with which you are very familiar. Why is it special to you?
5. The Ancestral Puebloan homeland defined who the people were, like being an "American" or a "Coloradan." For example, they may have been the people of the Green Plateau or the Forested Hills. Their homeland gave them **identity.** What place do you consider your homeland? Does this homeland give you a special identity?

Read to the students (continued):

Imagine 800 Years Ago

Imagine it is 800 years ago. You are visiting the place called Escalante Pueblo. The village is high on the hill overlooking the Great Sage Plain. The plain is filled with hundreds of family farms and small communities. There are no paved roads. Surrounding this place are large mountains and mesas to the east and south and deep canyons to the north and west.

When your people travel long distances, it is for important reasons. They hunt, gather plants for medicine and food, visit relatives on holidays, and trade. You have to know your environment well. The travel routes are not easy to see. To be able to travel from place to place, you must notice the big shapes of the land. You must also notice directions you turn and the subtle things near the trail, such as rock piles, tree-notch markers, or unusual plants or rocks.

Describe how to come from your homeland (where your school is located) to Escalante Pueblo. Do not use any modern markers, such as roads, buildings, signs, and so forth. Use only natural landmarks and indicators from ancient times.

Read to the students for closure:

Let's compare the directions we wrote using a modern map to the directions we made using natural landmarks only. How are the directions similar? How are they different? Tell me a little about your favorite places. Why are they special to you?

Vocabulary
Use the following list as a reference for this activity.

identity - the distinguishing character of a person; how people think and feel about themselves, and how they define themselves.

natural landmark - a unique formation of the land, usually made by nature—for example, the Dolores River or Sleeping Ute Mountain.

natural resources - materials in nature used for economic activity and basic survival by humans.

A Sense of Place: Perceiving the Landscape

Name:_____

First, listen as your group leader reads the introduction to the activity. Discuss the answers to the questions with your group and then write them below.

1. Write a description of how you came from your school to the Anasazi Heritage Center. Use a road map or the landscape model in the museum lobby. Include the directions you turned, and use the names of roads, buildings, and other modern markers.

_____

_____

2. Ancestral Puebloans probably did not travel as far or as often as modern travelers. If Ancestral Puebloan traders traveled from your school to the Anasazi Heritage Center, how long do you think it took them?
   _____ hours

3. Ancestral Puebloans relied on the **natural resources** in their area both while traveling and at home. What natural resources did you notice on the drive here that ancient people could use while traveling?

_____

_____

4. Since Ancestral Puebloans lived in the same area for most of their lives and rarely traveled far, they became familiar with their homeland. Describe a favorite place you are very familiar with. Why is it special to you?

_____

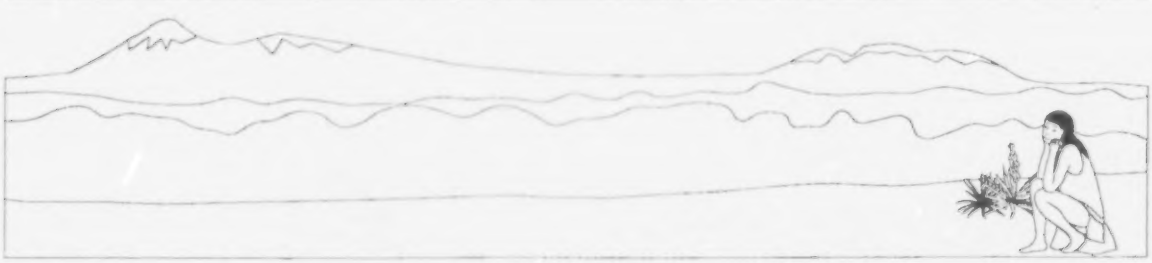
_____

5. What place do you consider your homeland?_____
   Does this homeland give you a special identity?_____

6. Listen as your group leader reads the story called "Imagine 800 Years Ago." Pretend you live in the time of the story. Describe how to come from your homeland (your school) to Escalante Pueblo. Do not use any modern markers, such as roads, buildings, signs, and so forth. Use only **natural landmarks**.

_____

_____



III. The Nurturing Environment

Feathered Friends
Nature's Harvest

The Nurturing Environment: Discovering Relationships between People and Nature

Introduction

In this section, students explore ways the environment supported and sustained the people of the Escalante community. By watching birds, identifying plants, and listening to stories, we enter into ways that plants, animals, and people lived side-by-side. Intimately connected to the rhythms of life in the environment, people respected and contributed to the ecological and mythological relationships within it.

The people of Escalante Pueblo acquired much of what they needed from the abundant plants and animals in the area. The Four Corners region is home to mountains, sage plains, rivers, canyons, and mesas. The variety of landscapes sustain a great diversity of plant, animal, and human communities—then and now. Hot summers, cold winters, and unpredictable rainfall in the area demanded cooperation and reciprocity among and within the communities.

The archaeological record suggests that wild plants were a major part of the Ancestral Puebloan's diet. In addition, animals, such as desert bighorn sheep, deer, bear, elk, jackrabbits, prairie dogs, mice, and wild turkeys, provided a ready source of meat. From the same plants and animals came tools and clothing. People learned the qualities of good firewood, the songs of birds, and many different stories about the coyote and other animals.

Leslie Marmon Silko from Laguna Pueblo suggests that the People and Land are inseparable. She says that both the "old ways" and the "old stories" have much to teach us "if only we will pay attention." Everything is alive—plants, animals, rivers, streams, mountains, and rock, as well as human beings—and contributes to the well-being of the earth.

Sharing stories about plants and animals is an excellent way to arouse children's interest in nature. The activities in this section braid portions of stories with scientific and cultural explorations of nature to build both reverence and understanding. Further exploration into these stories is encouraged in the extension activities and recommended readings. The tales are colorful and magical, where animals speak and plants move. The fantastic events have unexpected outcomes that can be fun or shocking. Often the story tells the listener something about nature and about being human. To be lazy like a coyote, to stand firm like a piñon pine, to see like an eagle—these qualities provide guidelines about how to live harmoniously in the world.

Feathered Friends: Bird Watching and Views on Birds

SUBJECTS: Science, Social Studies, Reading
SKILLS: Cognitive—comprehension, application, analysis
Affective—receiving, responding, valuing
Psychomotor—perceiving (listening, observing); physical action (walking)
DURATION: 25 minutes, bird research and bird watching practice; 35 minutes, bird watching

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—1,2,4,5,6
Visual Arts—1
Music—(extension) 1,3
History—3,6
Geography—5,6
Science—1,3

Activity Summary
Students learn about birds from a scientific and Pueblo perspective. They study and take notes on birds from scientific and Puebloan references and then identify real birds near Escalante Pueblo. A list of the birds identified is made using names from both systems.

Objectives
Students will be able to
1. See two or three birds near Escalante Pueblo.
2. Use a standard field guide to identify one or two birds.
3. Explain a few details about what Pueblo people think about the specific birds they identify.
4. Discuss the bird ideas and information that they hear in the Pueblo bird stories.

Materials
- *Feathered Friends* student notebook for each student
- *Feathered Friends* group leader instructions
- Bird identification field guides (AHC)
- Bird cards (AHC)
- Clipboards (AHC)
- Pencils

Vocabulary
awl
protocol

Procedure

Place
Start in the AHC plaza or multiuse room for Learning about Birds and the Bird Watching Protocol. Go to the service road or nature trail for Bird Watching.

Activity
1. Students first learn how to see and hear descriptive details that identify birds by taking notes from field guides. They practice on chickadees and pinyon jays.
2. The group leader describes and discusses the bird watching protocol with students before they begin bird watching.
3. The group leader takes small groups of students up the hill to watch for birds. (You may wish to ask permission to use the service road instead of the trail. It is often quieter, and you are more likely to see birds there on a cool morning.) When a bird is spotted, students follow the bird watching protocol and try to identify the bird. The group leader reads from the *Scientific and Pueblo Bird Information* about each bird that the students see. The leader makes a list of birds identified and the students copy the names into their *Feathered Friends* notebook.

Closure
After all the groups have completed this activity, gather in the AHC plaza or classroom to compile a master list of all the birds identified. Have students share their impressions of the Pueblo bird stories and other information about the birds that they saw.

Helpful Hints:

If your group does not have at least 60 minutes for this activity during your field trip, take notes on the assigned birds and practice the bird watching protocol prior to the field trip. You might also want to use a jigsaw method for bird research that will create expertise prior to the trip and facilitate bird identification while on-site. For the jigsaw, assign a different bird to each student in a group to research and take notes. The students learn about their birds with members from the other groups who are assigned the same birds. Students then return to their original groups with their new "expert" knowledge for the field trip.

Extensions

Artifacts from Birds: Students tour the Main Gallery and make a list of artifacts made from bird parts.

Pueblo Bird Stories: Share Pueblo stories about birds and identify the common story elements using a story review format. You will find collections of stories in books available at the AHC Museum Shop and Library. Check with the museum educator for more information on this extension.

Make Your Own Bird Story: Write and illustrate new stories about different birds incorporating the elements identified in the story review.

Bird Songs: Learn and sing a chickadee song, and create other bird songs. Check with the museum educator for more information on this extension.

Assessment

Behavior: Group leaders report informally about each student's participation in the activity.

Student notebooks: Review student notebooks for completeness and accuracy.

Teacher's Background Information

Feathered Friends encourages students to see birds from two perspectives, the Western European perspective presented in commercial bird guides and the Pueblo perspective.

The Western European approach to observing and describing nature is to create a classification with independent—often nonrelated—units in an exact system. The system, or science, involves an objective, nonpersonal evaluation of physical evidence. The observer is expected to keep a distance from the subject of study, especially in the personal and emotional realm. The subject is treated as an object, without meaning or inspiration for the observer.

The Pueblo classification of birds is different from that of Western science. Aesthetic, religious, and empirical aspects are included in their knowledge and understanding of birds. They do not separate the personal and emotional realm from the objective aspects of nature. Humans are expected to be influenced and inspired by the natural world, as well as to use it for its resources. Traditional and religious stories include birds and animals. The ecology and behavior of the animals are described, yet the animals have significant roles in the plots that entertain and guide human behavior.

Historically, Pueblo people integrated birds into many aspects of their lives. Birds, including turkeys, were often caught for their feathers rather than for food. Small, brightly colored birds, or "all the birds of summer, rainbringers" *(Pueblo Birds and Myths),* were caught in nooses made from human hair, which were baited with seeds and could quickly cinch up around feet. Tasks such as house building and planting fields needed feathers from particular birds. Certain rituals and ceremonies also required specific feathers. Birds and their feathers acted as messengers and delivered timely messages from the Creator/Nature to the people. Many of these practices continue today.

Evidence of birds shows up frequently in the archaeological record of the Four Corners region. Bird bones were used as awls, and feathers were woven into blankets and robes. Bones and feathers from local and exotic birds such as parrots are found.

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Feathered Friends: Bird Watching and Views on Birds

Activity Summary and Instructions

- *Instructions appear in italics; read the rest of the text to the students.*
- *In the AHC plaza or multiuse room, guide your group in doing research on chickadees and pinyon jays.*
- *Then lead your group up the trail or service road. While up the hill, read the* Scientific and Pueblo Bird Information *and help the group identify birds.*

Read before beginning the activity (Introduction):

There are many ways to view, study, and understand birds. Modern scientists classify birds using categories that describe body shape, habits, and ways of living. Pueblo people also classify birds by shape and habits. But birds play a larger role in Pueblo culture. Traditional bird stories contain information that describes the looks and personality of a bird, as well as ideas that entertain and instruct people on how to live. The stories help pass on traditional beliefs and ways of thinking about the world.

Read in the plaza or multiuse room:

1. *Learning about Birds.* We will learn about chickadees and pinyon jays using both the scientific and Pueblo perspectives. Look in the field guides and at the cards for each bird. Record the information asked for in your notebooks. When you are done, you will be familiar with these birds and better able to find them in a natural setting. You will also know what to look for when identifying other birds. *[Let the students do their research for 5 to 10 minutes. Help them find the birds in the field guides and take pertinent notes from the bird cards. The information on the cards is also found in the* Scientific and Pueblo Bird Information, *which is part of this instruction sheet.]*

2. *Bird Watching Protocol.* Please listen carefully as I read this bird watching protocol. Does anyone know what a protocol is? A protocol is a special way to do something. A bird watching protocol is the special way we will act while we look for birds. We will practice the bird watching protocol as we walk up the hill, and use it while we sit and listen to stories about birds from the Pueblo and scientific perspectives.

   First, let's practice using specific reference points and the clock-face numbers to describe where a bird might be located. For example, if you see a bird far away say, "Start at the tip of the tall tree on the hill; then look down to the right at 4:00 to the shiny bush and see the robin on the bare branch." This is a very important part of the protocol to understand. Pick an object nearby and try to describe it to a friend.

The Bird Watching Protocol

- Move slowly, calmly, and quietly so we don't startle the birds.
- When you see a bird, slowly raise your hand.
- When you are chosen, quietly move up closer to identify it. I will choose another person to go with you.
- Use very specific reference points and exact directions, such as left and right, or clock-face numbers to show your partner where the bird is located. Use these directions to guide them to the next marker location.
- Observe and memorize the bird's description before you try to identify it.
- Remember to look for the specific kinds of details we studied earlier for the chickadee and pinyon jay.
- After you memorize the way your bird looks, return to the group and look it up in the field guide and on the bird cards. All group members will help you identify it from your description.
- In your notebooks, list all the birds that you see. Use the Pueblo classification information on the bird cards, or we can look them up in our *Scientific and Pueblo Bird Information.*

3. *Bird Watching.* Let's go bird watching! We will move carefully up the hill using the bird watching protocol. Remember to be very quiet and stay together as a group. Part way up the hill, we will stop and sit in a circle. I will read the scientific and Pueblo descriptions of the birds we see from the bird cards and the *Scientific and Pueblo Bird Information.* If someone spots a bird during the reading, we will follow our protocol until the bird is identified. We will continue reading and bird watching until we are out of time. If we do not identify any birds, we will simply read the *Scientific and Pueblo Bird Information* and look at the images on the bird cards.

Bird Sighting List

Let's make a list of the birds we name or identify. Would one of you like to be the official recorder? If not, I'll be happy to record the bird names. If we can't identify a particular bird, we will just add a description to our list instead.

Name	**Pueblo Type**
1.	
2.	
3.	
4.	
5.	

Unidentified Bird Descriptions _____

Vocabulary

Use the following list as a reference for this activity.

awl - a long, pointed tool, usually made of bone, that is used for puncturing or drilling holes in leather or other materials.

protocol - a strict set of procedures to be followed in a given setting.

*Scientific and Pueblo Bird Information**

Red-tailed Hawk

The Red-tailed Hawk is a *buteo*—a large hawk with broad, rounded wings and a short, broad tail that allows the bird to soar high in the sky or hover motionless in the air and swoop toward prey. The most obvious colors that stay the same in all seasons are the rust-red tail and dark patches on the underside of the "shoulders." When perched, look for a white breast that contrasts with a dark head. Hawks often perch out in the open—near the top of a tall tree, on a utility pole, or on the top of a rocky outcrop. From these high perches, they survey the ground below for lizards, snakes, rabbits, prairie dogs, and insects. Just before catching prey, all four toes of each foot are fully extended; upon contact they close around the animal. Near Escalante Pueblo, the Red-tailed Hawk is most often seen soaring high in the air above McPhee Reservoir.

Pueblo Bird of the Sky

The Hopi people, living on a high plateau in northern Arizona, call the Red-tailed Hawk a *Red Eagle* or *Kwa'hu.* They are admired for their strength, keen eyesight, and hunting ability. The feathers of Red Eagle are attached to bows and arrows used in hunting.

Golden Eagle/Bald Eagle

Admired for their keen eyesight and hunting and foraging ability, the Bald Eagle and the Golden Eagle are the largest birds of prey in North America. Golden Eagles are brown with a variable golden wash down the head and neck. Bald Eagles are dark with an obvious white head and large yellow bill. Young Goldens can be difficult to tell apart from young Bald Eagles; they are both dark colored overall. Look for white "underarm" patches in the young Goldens. If the bird rocks in flight or flaps its wings in a hurried motion, it is not an eagle. Near Escalante Pueblo, both birds are most often seen soaring high in the air.

Bald Eagles sit on perches while hunting and will often not move from a perch for hours (sometimes not for an entire day!). They are frequently found near water, where they hunt for fish, ducks, and geese. The eagles scavenge the shoreline for dead and dying fish or catch fish on the surface of the water by approaching on a shallow glide, then lowering their feet into the water. They also hunt mammals and other birds.

Golden Eagles often hunt in pairs. Their prey is primarily mammals—ground squirrels, jackrabbits, foxes, and an occasional lamb or pronghorn. They will also take ducks and Great Blue Herons if near water. Golden Eagles hunt along canyon walls and on the side of cliffs.

* Pueblo bird stories excerpted from *Pueblo Birds and Myths,* by Hamilton Tyler.

Pueblo Bird of the Sky (Eagle)
Some Pueblo people gather young eaglets from nests in the early spring. Tethered on rooftops or kept in cages, they are cared for as "children" until they are adults. Later, they are "sent home" to carry offerings and prayers to the cloud people for rain. The following is a Hopi prayer:

Father of Eagles; give me long life and your strong heart. You travel so far and fly so high, that your breath is strong and Clear. Make my heart clean like yours. I breathe from your Feathers, so make me strong like you.

Broad-tailed Hummingbird
Male Broad-tailed Hummingbirds can readily be identified by the humming sound of their wings. The wings beat nearly 80 beats per second and make a whirring metallic sound. No other hummingbird usually makes this sound. Color markings include bright green on the back and white on the belly. Males also have a bright red chin; females have a white chin with dusty red on the sides. A similar-looking hummingbird that does not make the humming sound is the Black-chinned Hummingbird. Hummingbirds can hover for long periods of time and can move in any direction (even backwards!). They capture small insects and spiders and drink nectar from tubular flowers with their long protruding tongues. Near Escalante Pueblo, hummingbirds can be seen and heard darting through the trees and feeding on spring wildflowers.

Pueblo Rain Bird
Hummingbirds resemble the rainbow, the arch where rain showers are brought down to earth. These tiny birds suck nectar from the tobacco plant, a plant used in ceremonies praying for rain. They possess both great speed and great endurance, and are known as messengers to the spirits who send rain. This story from Acoma Pueblo tells how hummingbird got her brightly colored feathers:

Hummingbird flew around the great waters to the north, south, west, and east to rouse the tides and put out the fire. She flew through the rainbow and for this reason the hummingbird wears the color of the rainbow in the feathers around her neck. The clouds came from every direction. The hail fell on the burning rock but could not cool the terrible heat. Rain fell and the fire was put out.

Violet-green Swallow
Swallows have long slender bodies about the size of sparrows with longer, pointed wings. The most common swallow near Escalante Pueblo is the Violet-green Swallow. It has iridescent blue-green on its head and back, with white cheeks on the face. It can look like Tree Swallows in dim light, but is distinguished by white rump patches. Swallows spend their days airborne, often in flocks, searching for insects. They are swift, tireless fliers who alternate flapping flight with sailing or fast gliding. From Escalante Pueblo, they are usually sighted flying. When not foraging, they often perch in a row of other swallows on a telephone line or long-dead branch.

Pueblo Rain Bird (Swallow)
Beneath the sun, between sky and earth, are clouds, and some of these bring rain to nourish all living beings. Rain, a language in itself, is understood by swallows. Rain priests at Zuni Pueblo believe that swallows will "sing" to them, and in turn they ask the birds to sing for rain. A swallow song from Zuni Pueblo goes like this:

Cover my earth mother four times with many flowers.
Let the heavens be covered with the banked up clouds.
Let the Earth be covered with mist: cover the earth with rains.
Great waters, rains, cover the earth. Lightning cover the earth.
Let thunder be heard over the earth, let thunder be heard.

Hairy Woodpecker
The Hairy Woodpecker is slightly smaller than a Robin. The male has white spots on black wings, white belly and back, and red on the back of its head. It is distinguished from the similar, smaller Downy Woodpecker by its large bill. Woodpeckers peck out nest cavities in trees, extract insects, and drum. Woodpeckers stand upright on vertical surfaces, such as tree trunks. They use their stiff tail feathers and legs to form a tripod to brace themselves on the trunks of trees where they peck and look for insects. They have strong head and neck muscles, and the skull is adapted to absorb the shock as the birds drill into the tree. Near Escalante, they are usually seen climbing up tree trunks.

Pueblo Bird of War
All woodpeckers are persistent drummers. In the pueblo world, drumming and war and thunder and weather are closely related. The Zuni Pueblo name for woodpecker is Tamtununu, from *ta* meaning wood and *tunu,* to make a booming sound like thunder. At Santa Ana Pueblo, an emergence story is told about how woodpecker used his skill to peck an opening into a tree that enabled the world to continue:

Woodpecker Boy was asked if he would make an opening. "Yes," he said, "if you will make me some prayer sticks." Woodpecker Boy flew up to the top of the spruce tree and began to peck at the ceiling. He worked for four days and at the end of that time he had a little hole pecked through. Badger was called on to enlarge the entrance towards the Sun. Eagle carried him up while the tree kept growing. He reports back that in the new world there are lots of clouds and all kinds of colors.

White-breasted Nuthatch
The White-breasted Nuthatch is a small rounded bird with a long sharp beak and dark gray on top of its head, neck, and back, with a white face and chest. The nuthatch forages for food in the bark of trees—upside down. It moves headfirst down the trunk of the tree or hangs upside down on the underside of a tree limb. The nuthatch might be seen wedging a seed into a tree and hammering the seed apart. Near Escalante Pueblo, this busy little bird can be seen year-round on the piñon and juniper trees, often in the company of Chickadees.

Pueblo Bird of War (Nuthatch)
At Zuni Pueblo, the name for the nuthatch is the one who comes down headfirst. At some ceremonies, the dancers wear nuthatch feathers and attempt to go up and down ladders upside down. Anything upside down or backwards is a war trait, because it is the opposite of normal behavior.

Mountain Bluebird
Mountain Bluebirds are shaped similar to a Robin but much smaller in size. The males are sky-blue all over, and the females are gray with blue wings. Mountain Bluebirds eat insects, but occasionally will feed on berries and fruit. They prefer to hunt over wide-open meadows, where the grasses are short or where the ground is bare and they can feed on or near to the ground. They often perch on small trees, shrubs, or dried-out plant stalks. If there are no perches, they can hover 10 to 20 feet off of the ground. Near Escalante Pueblo, these birds are most often seen flying low out over the open field beyond the parking lot.

Pueblo Bird of Winter
The Mountain Bluebirds bring the warmer spring weather when they arrive from lower elevations near the end of the winter. At Zuni Pueblo, a ceremony held before the beginning of planting season gives thanks to the bluebird for signaling the end of winter. At the conclusion of the ceremony, bluebird feathers are taken into the fields and planted.

Black-billed Magpie
Often seen in flocks, the Black-billed Magpie has short wings that do not allow it to fly gracefully or for long distances. It is often seen on the ground hopping or walking. If in a hurry, it might take a wing-aided jump. Magpies are often seen in scrub thickets or feeding on roadkill. They may be seen foraging for insects on the ground as well.

Pueblo Bird of Horticulture
At Taos Pueblo, magpies are compared to human beings. Both hunt, gather wild berries, and as a group talk a lot. In fact, magpies have been known to learn several human words. However, magpies are rumored to despair and say, "I will never be a human being."

Bewick's/Canyon Wren

All wrens are small rounded birds that perch forward with their bodies while their tale angles up behind their back. They often bob forward, causing their tale to flick up. They perch on medium level branches and rocks, often in open view. They are well camouflaged, however, by their brownish mottled coloring on the back and light underbellies. The Bewick's Wren is distinguished by its long white and brown eye stripe. The Rock Wren has only a slight eye stripe and a grayish back. The Canyon Wren has more of an orangish tone on the body and a very white throat. Wrens are fun to hear and watch. Rock Wrens can be seen carrying stones to a rock shelter or nest, leaving a line of pebbles on the way. Bewick's Wrens are commonly heard at Escalante yet rarely seen. They sound nearly identical to the Rufous-sided Towhees. The call is two chirps and trill in the pattern of *Have some teeeeeee?* The beautiful descending call of the Canyon Wren can occasionally be heard drifting up from the cliffs near McPhee Reservoir.

Pueblo Bird of War

The Pueblo people discuss a wren similar to the Bewick's, the Rock Wren, as being wild because of its funny bobbing motion, flicking of the tail, and jerky flight. The Zuni name for wren is *Z'ilisho* from *jalish*, which means crazy. This behavior can be related to warfare. The reputation of the Rock Wren contrasts to the Canyon Wren. The Canyon Wren has a voice that is admired for its beautiful, loud song that echoes down the canyon. It is called a bugler. At Acoma Pueblo, the role of Canyon Wren has been elaborated in stories. In the stories, all pueblos have a town chief and an outside chief. The outside chief had the "duty to notify the people by crying out all matters of importance relating to outside (the pueblo)." The Canyon Wren is one of the town criers. The echoing voice is thought to distract and confuse enemies as well. At Hopi, there are ceremonial dancers that represent Canyon Wrens.

Pinyon / Scrub Jay

Jays are similar in shape to a Robin and just a little larger in size. Pinyon Jays are blue all over with a few white streaks on the belly. Scrub Jays are grayish blue with a gray/white throat. Pinyon and Scrub Jays search for food on and off the ground. When ground foraging, the jays walk and probe with their bills. They may be seen storing or retrieving seeds beneath trees. Pinyon Jays can feed in a flock, with the group traveling in a leapfrog fashion. Scrub Jays usually feed alone. The jays use their feet and beaks to move pine needles, cones, and branches. They store about 15 seeds and cover the stash for the next winter. Near Escalante Pueblo, jays can be the loudest and most visible birds throughout the year. They are not shy and are often seen near the picnic areas waiting for food scraps. But don't feed them!

Pueblo Bird of War

Pueblo people know the Pinyon Jay as *Blue Crow*. Pinyon Jays travel in flocks, and their distinctive calls are loud and attention catching. They are likened to human warriors as they travel about. Jays are fearless and will attack an "enemy" if needed. At Zuni Pueblo, jay feathers are used when a house is about to be built or a cornfield to be planted.

Northern Flicker
Flickers are larger than Robins. They perch on the trunks of large trees. The Northern Flicker present in the Four Corners area is known as the Red-shafted Flicker. This woodpecker forages on the ground and in trees. About 45 percent of a flicker's food is ants. Flickers drum loudly, along with a loud, long rolling call that sounds something like *keck-keck-keck-keck*. They are often sighted with their wings open and spread, so that the bright orange-red undersides are visible.

Pueblo Bird of War
The Pueblo people revere the Red-shafted Flicker with its black-tipped, salmon-red feathers on the wings and tail. At Taos Pueblo, flicker and eagle feathers are placed in the mountains as offerings to Red Bear, the spirit guide of the warriors. Here is part of a story that explains how the flicker got its red feathers:

The blind earthquake demon set fire to pitch and caused a flow of volcanic lava. Various birds attempted to quench the fire, and the crow for his efforts became black. Another bird, Kowata, the flicker, went too close to the flames, and the fire colored his wings and tail red.

Wild or Mountain Turkey
Wild Turkeys are slightly smaller and more slender than domesticated turkeys. They have dark, iridescent bodies, and white and red wing bars. Their bare-skinned head is blue and pink. Wild Turkeys travel in flocks. They feed on insects, seeds, frogs, lizards, and fruits found on the ground. Turkeys are rarely sighted flying, but instead move together following the leadership of the oldest turkey. When the wise leaders are killed, confusion and disorientation scatter the flock. The turkeys can be heard making a *gobbling*-like call. Turkeys can be seen near Escalante Pueblo in open places between trees and in fields in the surrounding farm areas.

Pueblo Bird of the Earth
Pueblo people know the Wild Turkey as a representative of Earth, and many ceremonies involve the turkey. Turkeys are easy to domesticate, and Pueblo people kept flocks for the feathers. The people probably did not eat the domesticated turkeys, however, they did eat Wild Turkeys hunted in the wild. The Ancestral Puebloans made and wore cloaks of turkey feathers. These robes were worn in the winter as coats, slept in for warmth, and wrapped around the bodies of the dead in preparation for burial in the earth. Today, turkey feathers are used to remember those who have died and in ceremonies requesting rain.

American Robin
The American Robin is about 10 inches in length and easily identified by its red breast and brownish gray body. The robin hunts by making short runs, stopping quickly, leaning forward, and cocking its head from side to side to see the ground. When an earthworm or insect is sighted, the robin jumps ahead and strikes with its bill. Hunting often occurs early in the day or early evening. Robins are often sighted in pairs or small flocks. They can be seen and heard in the trees, fields, or developed areas near Escalante Pueblo.

Pueblo Story
Not available.

Mountain or Black-capped Chickadee
Chickadees are light gray overall with black on the tops of their heads and on their chins. The Mountain Chickadee has a white eyebrow strip, and the Black-capped Chickadee does not. The Mountain Chickadee is gray, and the Black-capped Chickadee is beige under the wings and on the sides. Small, plump or rounded birds with very busy behavior, chickadees feed mainly on insects and forage within 50 feet or so of the ground. While feeding, they may be seen circling around a tree trunk or hopping from branch to branch. Their call is easily recognized as *chick-a-dee-dee*. Chickadees are one of the most common year-round birds near Escalante Pueblo. They can be seen in the branches of the pinon and juniper trees.

Pueblo Story
Not available.

Rufous-sided or Spotted Towhee
This robin-sized bird has a black hood, back, and wings that contrast with the orange-red sides and white belly. The wings have white spots. The Rufous-sided Towhee feeds primarily on the ground. With its sturdy feet and legs and curved toes, it is often seen scratching for insects in the leaves under a bush. Towhees are shy birds, more often heard singing or scratching than seen flying or perched in the open. The towhee makes a catlike meowing call. Its song can be compared to the sound of an old-fashioned telephone when dialing—two short notes on the wind-up, and a long trill on the spin. It cannot be identified exclusively by its song, however, because the sound is very similar to the Bewick's Wren. The Rufous-sided Towhee and the Bewick's Wren are two of the most common birds heard near Escalante Pueblo in the spring, summer, and fall.

Pueblo Story
Not available.

Dark-eyed Junco

Dark-eyed Juncos are small gray birds with a variety of color patterns. All varieties have white stripes on the outside edges of the tail, which are most visible in flight. In the winter, they move in flocks. Juncos forage for seeds and insects on the ground. In the winter, they are often seen scratching and kicking to shake seeds from plants sticking up above the snow. During the rest of the year, they often hop about as they forage for food. If something startles them, they will fly up into a tree for safety. They are one of the most commonly sighted birds in the piñon and juniper trees near Escalante Pueblo in all seasons.

Pueblo Story

Not available.

Macaws and Parrots

Macaws and parrots are exotic birds. None are found living in this area.

Pueblo Birds of the Sun

Many bird feathers and bird skeletons have been found at archaeological sites indicating that village people kept macaws and parrots. A well-developed trade network to the south was established, and the people of this region traded for these birds.

Feathered Friends: Bird Watching and Views on Birds

Name:_____

1. Learning about Birds

- Gather in a quiet circle so you can hear the introduction read by your group leader. You will see and learn about birds using both the scientific description and Pueblo perspectives of bird types.
- Record information about the pinyon jay and the chickadee from the bird guidebook onto the identification chart below. These are the same details you will look for while identifying other birds.

  ? What is the bird's size? Compare it with a bird you are familiar with, such as a robin or a hummingbird.

  ? What is the bird's shape? Sketch or describe it. For example: plump with short beak and square tail; slender with pointy beak and long, notched tail; very long, rounded wings and fanned tail.

  ? What is its color and special markings? For example: gray overall with white wing stripes and yellow belly.

  ? What is its behavior? Does it dart after insects, perch on a branch and sing, soar in the air, climb tree trunks?

  ? What is its habitat? Describe where you saw it. For example: shore of the lake, high in the forest, in an open field.

  ? What sound does it make? Birds have both melodic songs and chirping calls that vary during different seasons. Describe the sound with words (chicka-dee-dee-dee) or with a line image of the pitch and rhythm (- - - - __ __ __ - - - - __ __ __).

Bird	Pinyon Jay	Chickadee
Size		
Shape · beak · head · wings · body · tail		
Color/Marks		
Behavior		

	Pinyon Jay	Chickadee
Habitat		
Sound		

Look up the pueblo type of the pinyon jay and chickadee on the back of the bird cards and record the information below.

Bird	Pinyon Jay	Chickadee
Pueblo Type		
Other Info.		

2. Bird Watching Protocol

When watching a bird, look for and quickly memorize the same details of size, shape, color, behavior, habitat, and sound to be able to identify it in the guidebook or from the bird cards. First, you have to find the birds. Follow the bird watching protocol read by your group leader.

REMEMBER: Walk up the hill slowly, calmly, and quietly, so you don't startle the birds.

3. Bird Sighting List

List the birds your group names or identifies. Describe any you cannot identify.

Name **Pueblo Type**

1_____

2_____

3_____

4_____

Unidentified Bird Descriptions_____

_____

Nature's Harvest: Investigating Plants and Their Uses

SUBJECTS: Science, Social Studies, Reading, Language Arts
SKILLS: Cognitive—comprehension, application, analysis, synthesis
Affective—receiving, valuing
Psychomotor—perceptual abilities (observation, touch, smell); physical abilities (walking, writing)
DURATION: 45 minutes minimum

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—1,2,4,5,6 Geography—5,6
Visual Arts—1 Science—1,3,5
History—3,4,6

Activity Summary
Students record information from the signs on the trail to Escalante Pueblo about how Ancestral Puebloans used plants. They sketch the plants and then hear a story about an Ancestral Puebloan girl who is learning about plant uses for her people.

Objectives
Students will be able to
1. Identify two wild plants near Escalante Pueblo.
2. Relate wild plants to an Ancestral Puebloan cultural context.
3. Record detailed observations of plants in a sketch.
4. Gather specific information from two types of references.
5. Use a dichotomous key (optional extension).

Materials
- *Nature's Harvest* student notebook for each student
- *Nature's Harvest* group leader instructions (includes the *Nature's Harvest Plant List and Trail Map,* the story *Blue Sky and Her Grandmother,* and *Blue Sky's Plant List)*
- Teacher's Master Plant Chart
- Clipboards (AHC)
- Pencils
- Signs and plants along AHC nature trail
- Escalante artifact kit, optional (AHC)

Vocabulary
ethnobotany
habitat

Procedure

Place
Start at the AHC plaza; then take the trail or path to each plant.

Activity
1. Assign two plants from the *Nature's Harvest* plant list (included in the group leader instructions) to each small, rotational group of students at the beginning of the visit. Each group starts in the plaza, where the group leader reads the introduction and activity instructions. The group leader helps students find their assigned plants on the *Nature's Harvest Plant List and Trail Map.*
2. The group leader assists students with reading the signs and finding pertinent information. Students fill in the plant chart in their *Nature's Harvest* student notebook.
3. Students observe each plant closely and sketch the whole plant and then one part in detail.
4. The group leader or a student volunteer reads the story *Blue Sky and Her Grandmother* at a shade ramada or rest bench after information from the trail signs has been gathered for both plants. Students record in their notebooks what Blue Sky remembers about each of their plants.

Closure
Gather all groups in the AHC plaza, and ask students to share information from their notebooks about their different plants. If available, pass around artifact replicas that include plants parts from the Escalante artifact kit.

Helpful Hints:

To shorten the amount of time spent on this activity at the Anasazi Heritage Center, read the story *Blue Sky and Her Grandmother*, along with *Blue Sky's Plant List*, as a closure back in the classroom. Do not use the optional Escalante artifact kit. You can also save time by giving students team roles within their rotational group. The whole group finds and briefly discusses each plant. Then one student records the plant use information, one records the ecology information, one sketches the plant, and one student finds and records *Blue Sky's Plant List* information. Back in the classroom, the team members share and copy what they found.

Extensions

Master Plant Chart: Back in the classroom, make a master chart that displays all of the information that the students from various groups gathered. Compare the information. For example, were some plants used for the same things? Do some look very similar? What were the students' favorite plants and why?

Plant Study Display: Make a display on a bulletin board of exemplary student sketches with the ethnobotany and ecology information under each picture.

Middle School Dichotomous Key: While looking at the plants during the field trip, have students use a dichotomous key. If used properly, the key will lead them to the same plants listed on *Blue Sky's Plant List* under the key's letter. When students get to the right place in the key, the group leader or a student reads Blue Sky's uses of plants. Check with the museum educator for more information on this extension.

Assessment

Behavior: Group leaders report informally on student attentiveness and participation.

Student notebook: Assess the student notebook for completeness appropriate to grade level. See the *Teacher's Master Plant Chart* for the uses that are listed on the plant signs.

Plant report: Students write a report about their plants back in the classroom using the notes they recorded on the field trip. They can include many other uses and additional information about each plant by researching the publications listed in the References.

Middle school dichotomous key test: Students use a key to properly identify one plant they see on the school grounds that was also part of the field trip activity.

Teacher's Background Information

This activity encourages students to feel at home with the rich plant heritage located in Escalante Pueblo's backyard. It also helps us to remember that nature's garden of wild plants continues to nourish contemporary Pueblo people. Using contemporary knowledge, we gain insight into how these plants may have been used in past centuries.

The study of how people use plants in their daily lives is called *ethnobotany*. Archaeologists have learned a great deal about the ways ancient people might have used plants. Most plant artifacts have perished at sites because of exposure to centuries of fluctuating environmental conditions. Sometimes, however, a cliff overhang, a trash deposit, or a room with a roof gave protection from the weather. Some plant pollens and artifacts constructed from plant parts were preserved and provide a glimpse into how plants were used.

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Ancestral Puebloans were skilled in identifying, collecting, and using plants for many purposes. The archaeological record suggests that people relied on wild plants for shelter, clothing, tools, food, and medicine. Plants were likely used in symbolic ways and for ceremonial purposes as well.

Plants provided many raw materials used for building. Roofs required the trunks and branches of juniper and cottonwood trees. Douglas fir, ponderosa pine, and spruce trees were cut and transported from higher elevations on the plateau. Wood also provided heat for cooking and warmth for cold winter nights.

For clothing, people wove fibers from the yucca plant and cotton traded from the south and west. Yucca was also used to make sandals, and frequently was woven with turkey feathers and rabbit fur to make warm blankets and robes. The leaves and fibers of the narrow and broadleaf yucca were twisted into rope and cordage. Yucca leaves and fibers were used to make awls, baskets, paintbrushes, and mats.

Branches and stems of skunkbush sumac, juniper, and mountain mahogany were made into arrow shafts, fire drills, cradle boards, and knife handles. Oak and juniper made sturdy digging sticks for planting seeds.

Plant foods included piñon pine nuts, berries from serviceberry and skunkbush sumac, Indian rice grass, yucca, prickly pear cactus, and early spring annuals. These were used to supplement cultivated crops, such as corn, beans, and squash.

Archaeologists don't know exactly how plants were used for medicinal purposes in ancient times. However, contemporary Pueblo people continue to harvest plants for healing. From them, for example, we know that chamisa, juniper, and sage can be brewed into teas to cure stomach ailments. Ephedra tea helps relieve asthma, coughs, and colds. The list of medicinal plants is extensive and Western scientists are taking a closer look at how some of these plants can be used in a clinical setting.

Today, many Native American groups use ceremonial plants in private rituals. The practices are conducted within the religious community and may involve offerings of gratitude and reverence to the earth. Plant offerings for ceremonies contribute to the continuation of rain, corn, other plants, animals, and people.

Gary Paul Nabhan, an ethnobotanist from the Sonoran Desert, suggests that plants symbolically link people with their home country and their past, serving as an anchor in a constantly changing world. In addition, he believes that the traditional scientific knowledge of plants is part of the cultural heritage of today's native people. Indeed, Pueblo, Navajo and Ute people continue to respect plants as an important part of their lives, using them in practical, symbolic, and ceremonial contexts.

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1991 *Wild Plants of the Pueblo Province: Exploring Ancient and Enduring Uses.* University of New Mexico Press, Albuquerque, NM.

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1991 *Common Spring Plants of Leupp Boarding School.* Arizona Ethnobotany Research Foundation, Flagstaff, AZ.

Moore, Michael
1979 *Medicinal Plants of the Mountain West.* The Museum of New Mexico Press, Santa Fe, NM.

Nabhan, Gary
1987 *Gathering the Desert.* University of Arizona Press, Tucson, AZ.

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1994 *Mother Earth's Mercantile.* Crow Canyon Archaeological Center, Cortez, CO.

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Teacher's Master Plant Chart

This is a collation of information from the AHC nature walk signs and the *Blue Sky* story only. Many other uses for each plant can be found in reference books in the Library or Museum Shop.

Name	*Food*	*Shelter/Fuel*	*Medicine*	*Tools*	*Clothing/Other*
Yucca	green fruit	none	none	rope, mats, baskets, paintbrushes	blankets, sandals, shampoo
Skunkbush Sumac	berries as drink	none	none	baskets	split twig figurines
Indian Rice Grass	edible seeds	none	none	none	none
Gambel Oak	leached acorns	fuel, ladders	tannins, astringent	digging sticks	none
Mountain Mahogany	none	fuel	none	agricultural implements, scrapers, stirring stick, weaving tools	bull-roar
Serviceberry	edible fruit	none	none	arrows	none
Juniper	edible berries	building materials, fuel	tea	none	berries for necklaces, absorbent bark for padding
Prickly Pear Cactus	edible fruit and pads	none	none	none	none
Piñon Pine	edible nuts	building materials, fuel	pitch for splinters, needle tea	pitch for waterproofing	none
Sagebrush	none	fuel	none	none	marker for deep soil, incense
Rabbitbrush	none	fuel	none	none	none
Fendlerbush	none	none	none	arrows	split twig figurines

Nature's Harvest: Investigating Plants and Their Uses

Activity Summary and Instructions

- *Instructions appear in italics; read the rest of the text to the students.*
- *Lead the students in finding two plants and completing their notebook questions.*

Read in the plaza before looking for the plant signs on the trail (Introduction):

Ancestral Puebloans were skilled in identifying, collecting, and using plants for many purposes. There is archaeological evidence that people relied on wild plants for food, shelter, clothing, tools, and medicine. Plants were also used in symbolic and ceremonial ways as well. As we walk the trail to Escalante Pueblo, we will gather information from the trail signs about our two assigned plants. This information came from contemporary Puebloan people and others who study and use plants. We think that the Ancestral Puebloans used plants in similar ways.

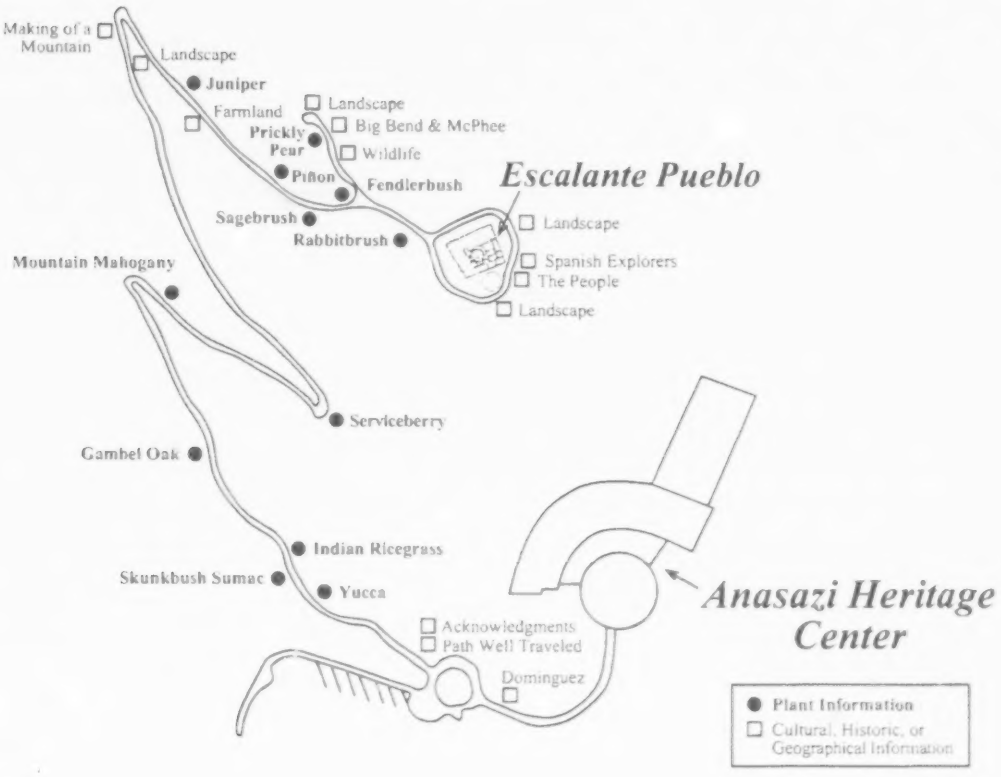
When we find a plant, we will read the sign and study the plant by gently touching, smelling, and observing it. You will record your observations on the chart in your student notebooks. Look at the example on the chart using the yucca plant. As we study our plants, we must remember to treat them with respect. Pueblo people honor plants as living beings and are grateful for what the plants bring to their lives.

***Read at the first assigned plant sign on the trail. Help students find pertinent information to use to complete the charts in their student notebooks*:**

1. ***Recording Plant Information.*** First, look for information related to the plant's uses. This is the **ethnobotany** of the plant. Then, find some other interesting detail on the plant itself, or on the sign, about the plant's **habitat**, appearance, or life cycle. Record the information in your notebook.
2. ***Making Plant Sketches.*** Next, sketch the outline of the whole plant in your notebook. Then, sketch details of one part of the plant. When you are done, we will find our second plant and repeat the recording and sketching steps.

After you have completed the notebook tasks for each assigned plant, read the story* Blue Sky and Her Grandmother *(or ask for a student volunteer to read the story). Find a bench or shade ramada so that students can relax while listening.

Nature's Harvest: Plant List and Trail Map



Plant List:

Yucca	Juniper
Skunkbush Sumac	Prickly Pear Cactus
Indian Ricegrass	Piñon Pine
Gambel Oak	Sagebrush
Mountain Mahogany	Rabbitbrush
Serviceberry	Fendlerbush

Blue Sky and Her Grandmother

Blue Sky, her mother, and her grandmother are up very early this morning. They are busy building the cooking fire and grinding red, blue, and yellow corn with the stone manos and metates. After cooking the corn for breakfast, they will gather the wild plants needed for every day, as well as for the feast to be held tomorrow evening after the ceremony.

With great excitement, Blue Sky combs her hair with her soft grass hairbrush, and puts on her yucca sandals. From the storage area, she gets dried meat with berries for lunch, which she places in a deerskin bag that hangs around her neck. She picks two baskets for carrying plants. She then fills a water canteen from the big clay jug her grandmother decorated with rain clouds.

This past year Blue Sky's mother and grandmother have been teaching her about the wild plants that grow on the mountain, down by the river, and up on the dry mesa above the village. These plants are used for clothing, food, shelter, tools, and medicine. It's fortunate that most are found within a day's journey of the village. As part of her lessons, Blue Sky listens to many stories told by village elders. She wanders the different plant habitats surrounding the village with her mother and grandmother and gathers many kinds of plants. Back in the pueblo, she learns how to prepare the plants for their various uses.

Last night, Mother and Grandmother said:

"Blue Sky, you have learned well. You know where to find many plants. You recognize the plants during different moons. You know how the plants bring food, clothing, and medicine to benefit the People. We feel that you are ready to have your own offering pouch. It is made from deerskin, and it contains sacred cornmeal. Tomorrow, on our gathering trip, you will show us what you know about the plants on the hillside below the village, and tell us how you will use them in our home."

Grandmother showed Blue Sky how to make an offering of thanksgiving with the cornmeal and taught her a song to sing when gathering plants:

We never take more than we need.
We always leave an offering saying thank you.
That way there will always be enough for everyone.

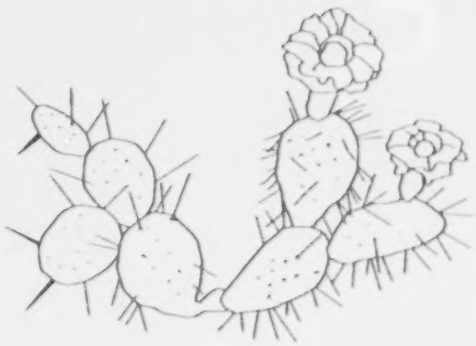
Blue Sky's Plant List

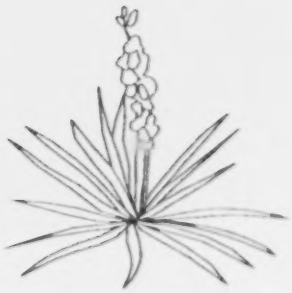
Look for your group's plants on the list below, and read how Blue Sky used them.

This is what Blue Sky remembers about each plant. I'll read the information about our group's assigned plants first. We can read about all of the other plants if we have time.

A. Prickly Pear

Last spring the yellow and red flowers were beautiful. By late summer, the flowers turned to bright red and purple fruit. We collected baskets and baskets of the sweet fruit. We soaked the fruit overnight, before boiling it in cooking pots. We strained the pulp through a piece of cloth to remove the spines and tiny hairs. We sun-dried some of the pulp into balls to keep for winter and made syrup that we ate for weeks.





B. Yucca Root

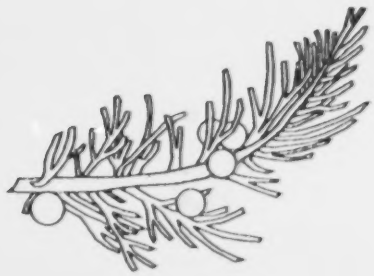
Cousin Hummingbird gathered the roots of this plant before her marriage to Grey Rock. We dug, cleaned, and pounded the root into shampoo for washing their hair before the ceremony. Afterward, their hair was shiny and smelled sweet. Frog Woman, the potter, showed me how she chews the tips of the leaves to make a paintbrush she uses to paint her beautiful designs on the water jars.

C. Piñon Pine

Grandmother collected needles and brewed a tea that helped me get over a bad cold and cough last winter. It tasted bitter, but it worked. Auntie can waterproof some of the baskets she has been making this summer with some of this sticky pitch. It is soft and pliable and will make a good pitch stick when combined with charcoal. The pitch can be warmed over the fire and spread on the basket so the basket will hold water.

D. Juniper

The shredded bark is used as an absorbent padding for baby Red Feather when we take him plant collecting with us. We especially like to gather the inner bark because it is sweet smelling and soft against the baby's skin. This bark also will make a good tinder bundle for starting fires.



E. Gamble Oak

Uncle Blue Spruce says that this wood makes the best ladders. I remember that rickety one we had two winters ago. I never wanted to carry Red Feather up to the roof because I was afraid the ladder would break. This wood could repair it. This spring, Grandfather let me help plant corn seeds with an oak digging stick from the Village of Red Stone across the river.

F. Sagebrush

Touch these leaves between your fingers. The smell is very aromatic and sweet. The kiva grandfathers are always pleased to see bundles hanging from the roof beams, drying in the sun, because they burn it as an incense. Father likes to use the older plants' woody base to make a bow-drill fire starter.

G. Fendlerbrush

Our clan brothers, Straight Arrow and Dragonfly, use the long, straight, green stems and branches for arrows. The bark is carefully removed with obsidian and then smoothed with palm-sized sandstone tools. This bush has straight branches and makes good arrows.

H. Skunkbush Sumac

Father and Grandfather make small split twig hunting figurines from the young branches. Grandfather told me a story about finding one in a cave used by our ancestors. He says the twigs are soaked overnight until they are soft and pliable. Just one twig is used to form the animal's body.

I. Mountain Mahogany

Uncle weaves the most beautiful kilts in the entire village. His weaving tools, heddle and comb, are carved from this wood. He also uses this wood to make a bull-roarer, a musical instrument that is spun through the air on a string to make a humming sound.

J. Serviceberry

The dried fruits are pounded into meat and dried for winter use or when we travel to collect plants. This wood makes strong and fast arrows.

Nature's Harvest: Investigating Plants and Their Uses

Name:_____

1. Find your plant and study it by touching, smelling, and observing. **Do not taste the plants.** They may be poisonous, or you may be allergic to them. Read about the plant's uses and its life cycle or role in nature.

2. Take notes from the sign and from your observations. (See yucca example.) **Ethnobotany** is the study of how people use plants. Use your scientific know-how to practice being an **ethnobotanist**.

	Name of Plant	Food	Shelter	Medicine	Tools	Clothing/ Other
	EXAMPLE Yucca	fresh or dried edible fruit	none	none	ropes, mats, baskets	blankets, sandals
1.						
2.						

Record something interesting about each plant. Think about its appearance, habitat, life cycle, or its use by animals.

Example: Yucca—broad leaf yucca are known as Banana Yucca because of the shape and color of the fruit.

a. _____

b. _____

3. Observe your plants carefully. On the next page, sketch an outline of the basic shape of each plant. Then draw the details of one part up close.

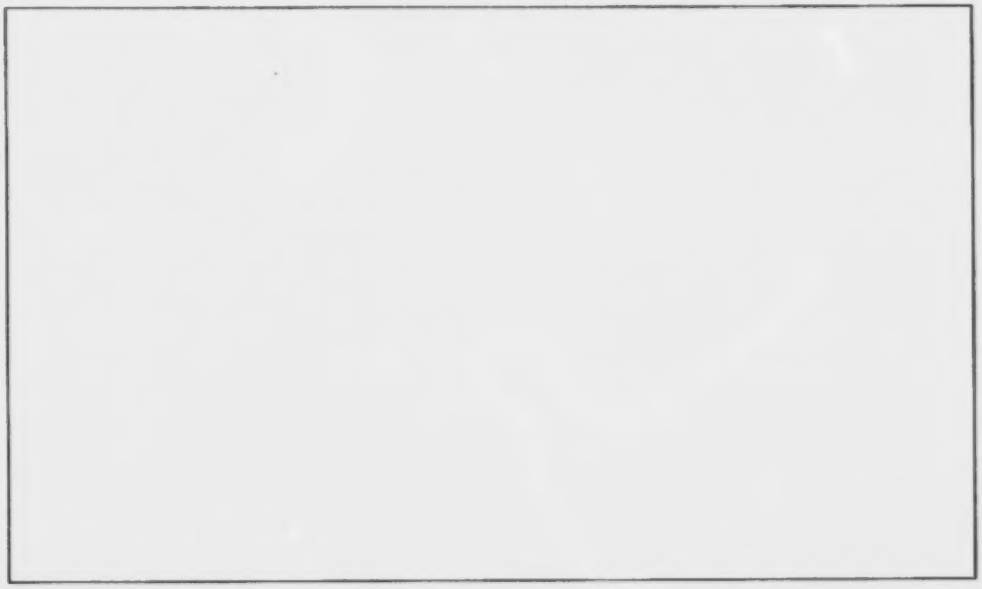
4. How did Blue Sky use your plant?

_____

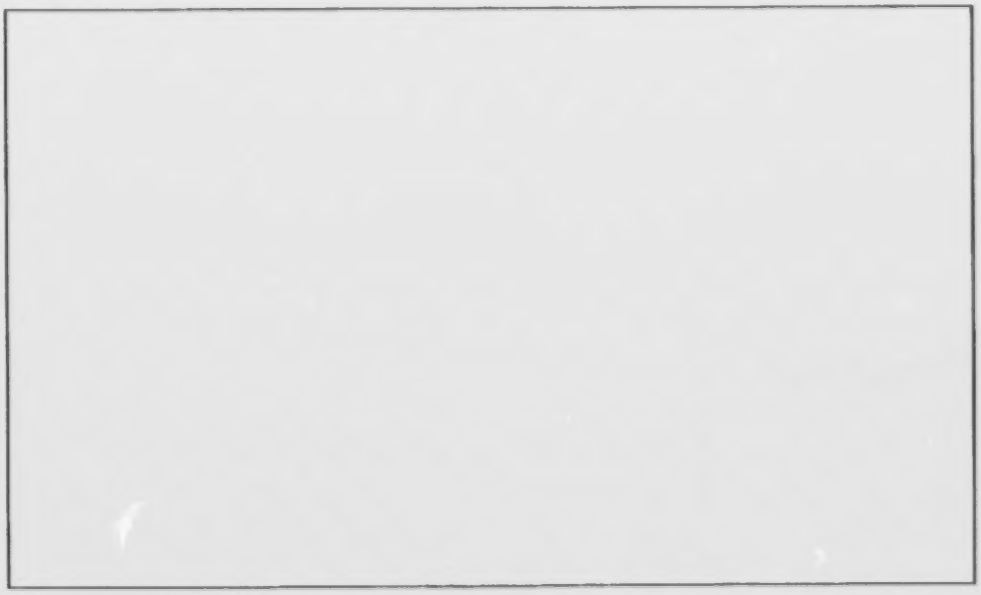
_____

Sketch an outline of the basic shape of each plant. Then draw the details of one part up close.

Outline of whole plant



Details of one part



IV. Archaeology in Action

Why Build on the Hill?
Context and Clues
Mapping and Measuring

IV. Archaeology in Action - Doing and Thinking Archaeology Science

Introduction

Archaeology is the science of studying people through the material remains or artifacts they leave behind. In the Four Corners area, artifacts, such as chipped stone tools, pottery, animal bones, and collapsed buildings, provide clues to how Ancestral Puebloans met their spiritual, social, and physical needs hundreds of years ago.

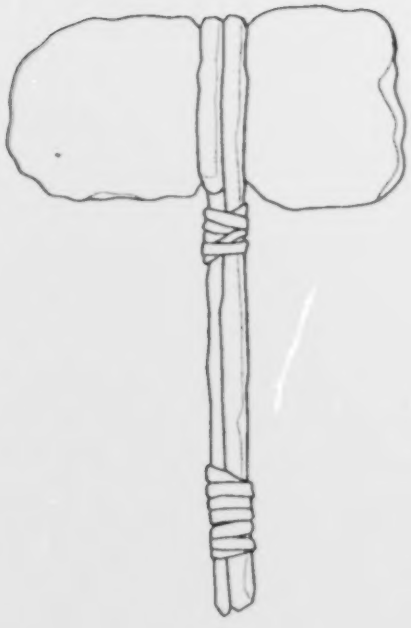
Every scientific inquiry begins with a specific question or set of questions. A possible answer, or hypothesis, is proposed. The hypothesis must be more than an educated guess; it must be testable using the methods of scientific investigation. Evidence, or data, must be gathered to support or disprove the idea. The activities in *Archaeology in Action* allow students to engage in scientific inquiry. The mental processes of asking a question, generating a hypothesis, and analyzing observations to make inferred conclusions are emphasized in the first two activities. The third activity presents a research methodology for gathering data to answer a specific question. Students use the archaeological tools of tape measures and mathematical formulas to generate a probable answer.

The lessons in this section progress from broad to narrow in focus. *Why Build on the Hill?* relates the Escalante structure to its geographical location. Students draw conclusions from general observations about the site and local landscape. *Context and Clues* asks more specific questions about how its builders and inhabitants used the site. Students analyze artifacts from each excavated room. Lastly, *Mapping and Measuring* focuses on how many people may have lived in Escalante Pueblo. Students can use the calculations from this mathematical activity in an extension to estimate the timber resources required for building the pueblo.

These activities give students a sample of the archaeological questions and methods that can occur in a site investigation. In a laboratory, detailed analyses of artifacts can add even more depth to the site story. Some of these analytic methods are presented in the Main Gallery at the Anasazi Heritage Center. They include tree-ring dating; microscopic analysis of ceramic, faunal, and lithic material; and experimental archaeology.

Scientific inquiry about ancient artifacts has helped us to establish many facts about Ancestral Puebloans, including what resources they used and what artifacts they possessed. Yet many aspects of the Ancestral Puebloans' lives cannot be established through scientific inquiry into tangible artifacts. How the people acted and felt, how they expressed their religious beliefs, and what certain objects meant to them cannot be counted, measured, or viewed under a microscope. Archaeologists make those types of inferences by studying the context of exactly where an artifact and associated artifacts are found.

Cultural inferences may also be made through the study of modern people descended from the Ancestral Puebloans, such as those living in the Hopi, Zuni, or Rio Grande Pueblos. Yet we cannot be certain that inferences based on contemporary peoples are applicable to ancient people. The modern examples may only provide a way for our imaginations to see real people living in a community with complex and meaningful lives. Some Pueblo leaders emphasize that it is OK that we do not know all the layers of meanings about the artifacts. That way, some mystique remains that intrigues both archaeologist and lay people alike.



Why Build on the Hill? Inquiring about Escalante

SUBJECTS: Science, Social Studies, Reading, Language Arts
SKILLS: Cognitive—comprehension, application, analysis, synthesis, evaluation
Affective—receiving, valuing
Psychomotor—perceptual abilities (observation); physical abilities (walking, writing)
DURATION: 60 minutes minimum

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—2,4,5
Math—3
History—2,3,4
Geography—1,2,6
Science—1,6

Activity Summary
Students work as a team to conduct a scientific inquiry about the location of Escalante Pueblo. Using simple environmental and site observations, they gather data to support a group hypothesis.

Objectives
Students will be able to
1. Describe three or four basic steps in scientific inquiry.
2. Develop a theory about why Escalante Pueblo was built on the hill.
3. Work in a cooperative team to reach a conclusion to the activity.

Materials
- *Why Build on the Hill?* student notebook for each student
- *Why Build on the Hill?* group leader instructions (includes *Site Interpretations: Dominguez and Escalante Pueblos*)
- Clipboards (AHC)
- Pencils

Vocabulary

data	observation
hypothesis	scientific methods
inference	theory
inquiry	

Procedure

Place
Begin in the plaza; then walk the path to Dominguez and Escalante Pueblos.

Activity
1. Each group leader helps a small team of students formulate a hypothesis about why Escalante residents built their pueblo on the hill. If you are using rotational stations on your field trip, this activity will be designated as one station, and one team will walk up the path to Escalante at a time.
2. Group leaders help students identify the evidence or data they need to support their team's hypothesis. Students record their ideas in the *Why Build on the Hill?* student notebook and discuss their hypothesis before going up the hill.
3. As students walk up the trail and around Escalante, the group leader encourages the team to search for data. Students record pertinent observations in their notebook. They make reasoned inferences from their research information and observations.
4. While resting under the shade ramada, students brainstorm additional research methods or experiments that would support their hypothesis.
5. Students discuss how their data and inferences may support or contradict the hypothesis and if the hypothesis may need to be modified and retested. These conclusions are recorded in their student notebooks.

Helpful Hint

It is best for the group leader to be familiar with the information in the group leader handouts prior to the activity. This will allow the group leader time to understand the information and become more comfortable discussing it with the students.

If your time is limited to less than an hour, you may do the closure with the whole class back in the classroom while viewing copies of the Escalante site map.

Also, you can save time if the group leader takes notes on the hypothesis, observations, inferences, and conclusions during the activity. Team members can then record the information in their notebooks back in the classroom.

If the museum educator or a docent is available, students can gain additional research information by asking them questions.

Closure
The group leader reads from the *Site Interpretations* sheet about Escalante and Dominguez Pueblos. Students compare their conclusions to those on the *Site Interpretations* sheet.

Extensions
Inquiry and Context Together: Do this lesson in conjunction with *Context and Clues*, adding information from that activity to the evidence used to support the hypothesis for each group. The two activities done together work as follows:

- Introduce inquiry and establish hypotheses in plaza.
- Make observations during walk to site and at the site.
- Introduce and do *Context and Clues.*
- Wrap up ideas about *Why Build on the Hill?* and present findings from both activities.
- Read the *Site Interpretations* and *Room Descriptions* for closure.

Investigate Other Sites: Apply this reasoning process when the class visits other sites in the area.

Assessment
Behavior: Group leaders report informally on student attentiveness and participation.

Student notebook: Assess the student notebook for completeness appropriate to grade level. See the extension in the activity *Context and Clues* titled *Peer Review and Site Report.*

Teacher's Background Information
Interpretive centers often present information or stories about ancient sites. Seldom, however, do we understand how the stories are derived. The information is presented as unquestionable fact. *Why Build on the Hill?* is an activity where students formulate their own ideas about a site. They gain an understanding about the scientific process of archaeological interpretation.

Science is based on previous research findings, observation, and inference. Any phenomenon being studied must first be researched in published reports about prior studies. All new ideas will build on prior conclusions. New observations are then made, whether from a satellite or through a microscope. Observation is an act of recognizing and noting a fact or occurrence. It can involve perception from many senses.

An inference is a reason proposed to explain an observation. The hypothesis is an inference that a scientist will attempt to confirm or disprove through testing.

Information gathered during test observations is called data. The research information and new data help scientists make a final inference about the hypothesis called the conclusion. A conclusion can confirm or negate the original hypothesis or suggest alternative hypotheses that need further testing.

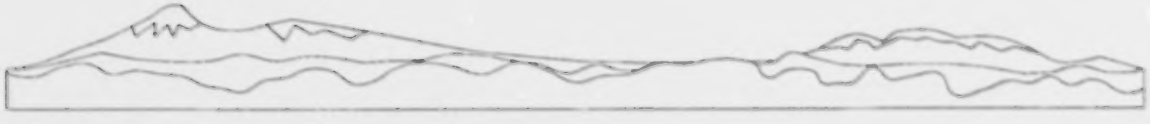
All final conclusions must be well reasoned and based on factual data. In archaeology, data must be considered with an open mind culturally. Personal cultural biases must be set aside and a variety of perspectives applied.

Students are tempted to make an archaeological inference overly influenced by personal cultural perspective. For example at Escalante, a house built on the hill could be interpreted as a place for the rich elite, since homes and offices with a good view tend to be valued highly and owned by wealthy people in contemporary society. Data that support a high location with a long-distance view may be valid, yet they do not support the conclusion. Other cultures could have many reasons beyond an aesthetic view for building on a high location. In addition, a high location may not have been greatly valued or a sign of social status in a different culture.

The conclusion would be supported if there were observations of a large, elaborate dwelling, refined objects, large stores of food, and other signs of wealth at the site. Escalante is a large, well-made dwelling, yet little else is evident that would further support the hypothesis. Thus, the hypothesis is weak. Students can gather more data to strengthen this and other hypotheses by doing *Context and Clues*.

To begin the process of site interpretation at Escalante, students must clearly understand the difference between observation and inference. They should be familiar with what kinds of observations can be used as data to support a hypothesis. We highly recommend the classroom activity "Observation and Inference," from *Intrigue of the Past*, prior to the field trip. You should also discuss cultural relativity and apply students' thinking to a familiar object or occurrence.

This activity helps students understand that there is not one absolute answer or conclusion to most hypotheses. It is important that they realize that factual data and objective reasoning must support any final inference. Students should also understand that conclusions can change if additional data are considered. If a conclusion is well supported through a variety of tests and over a long period of time, it will become known as a theory.



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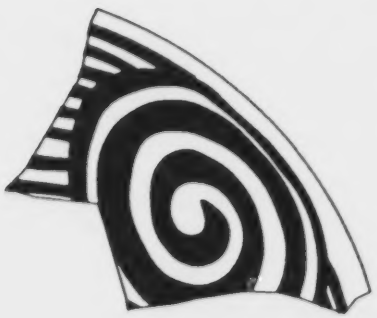


Why Build on the Hill? Inquiring about Escalante

Activity Summary and Instructions

- *Instructions appear in italics; read the rest of the text to the students.*
- *In this activity, you will help the students in your group compose a statement about why Escalante was built on a hill. You will also help them with the other questions in their student notebooks.*
- *Begin the activity in the plaza, and then take the path to Escalante for the conclusion.*
- *If the teacher has asked you to do the activity closure with your group at the Escalante site, make sure you have a* Site Interpretations *sheet before you leave.*

Read in the plaza before walking the path to Escalante Pueblo (Introduction):

Archaeology is a science that uses **inquiry** with **scientific methods**, including publication research, **observation, inference,** and experimentation. Archaeologists use all of these methods to answer questions and establish theories about archaeological sites and the people who made them.

Today, we will act like a team of scientists using information from trail signs and environmental observation to answer the research question, "Why did the people of Escalante Pueblo build their house on the hill?" The first step in a scientific inquiry is to suggest a probable answer to the research question. But the answer must be more than a guess. The answer must be a **hypothesis** that can be tested to either prove or disprove the idea.

Read after the students have formed their scientific teams. Do not let them linger more than 5–10 minutes on this step:

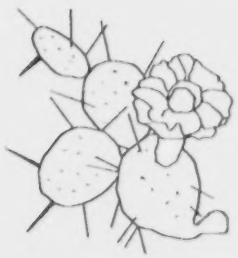
1. *Generating a Hypothesis.* Discuss with your team some reasons why people would build on a hill. Have fun brainstorming. Say whatever comes to your mind; no ideas are bad. Then think about which ideas are more likely, and are based on the best reasoning. Choose one idea that your team could test by making observations while walking up the hill and looking at the building site. If necessary, vote to come to a team decision. Write the hypothesis you chose in your notebook.

Read to students while still in the plaza before going up the hill:

2. *Research Design Using Environmental Observation.* You will test your hypothesis by gathering information from trail signs and making observations at Dominguez Pueblo, on the trail, and at Escalante Pueblo. What evidence are you likely to find that would support your hypothesis? Write two or three possible observations in your notebook. Like other information gathered in a scientific inquiry, these observations are called **data**.

Read after students have successfully written their hypothesis and expected observations:

3. *Gathering Data about Your Hypothesis.* Now let's walk the trail to Escalante Pueblo. On the way up the hill and while we're at the Escalante Pueblo, watch for anything that may relate to your hypothesis. If you see something that could be used as data, stop, discuss it with your group, and write it in your notebook as data. Remember to make an inference about what the data mean and how the information relates to your hypothesis.



Stop at the Dominguez site, and part way up the path; read as a reminder to keep students on task:

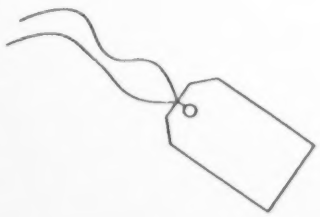
Does anything you see tell you why the Escalante people built on the hill? Read the signs. Look at the neighboring site, the environment, the vegetation, signs of animals, resources the people may have used, evidence of water or rainfall, or anything else that seems to relate to your hypothesis. Remember to record your information, observations, and inferences.

Read at the observation platform overlooking Escalante:

You may step off of the sidewalk and go into the excavated rooms or on top of the unexcavated sections of Escalante Pueblo to make more observations. REMEMBER: DO NOT STEP OR LEAN ON THE WALLS. Stay two steps back from the edge of the kiva, the deep, round room. Do not go into the kiva. If you see any artifacts, please leave them where they are and report them at the museum later.

Read under the shade ramada after you have walked around and through the Escalante site:

4. *Other Scientific Methods.* What other ways could you test your hypothesis and gather evidence to support or disprove it? Think about the techniques displayed in the museum, such as tree-ring dating, the use of microscopes, or experimental archaeology.
5. *Conclusion.* Is your hypothesis likely true based on what you read and observed today? Why or why not? What other ideas do you have? Write your conclusions in your notebook first; then we will discuss them.



Read after all teams have discussed their conclusions (Closure):

The point of this activity is to help you understand that there is not one absolute answer or conclusion to most hypotheses. It is important for us to realize that factual data and objective reasoning must support any final inference. You should also understand that conclusions can change if additional data are considered. But if a conclusion is well supported through a variety of tests and over a long period of time, it will become known as a **theory**. Archaeologists have many conclusions for the question of why people built Escalante Pueblo on the hill. Let's return to the viewing platform, so that we can see more of the pueblo while I read.

Vocabulary
Use the following list as a reference for this activity.

data - information, especially observations, measurements, and calculations, organized for analysis in a scientific investigation.

hypothesis - an explanation that can be tested by further investigation and observation.

inference - a reasoned idea, interpretation, or conclusion that is reached based on data, evidence, or observations.

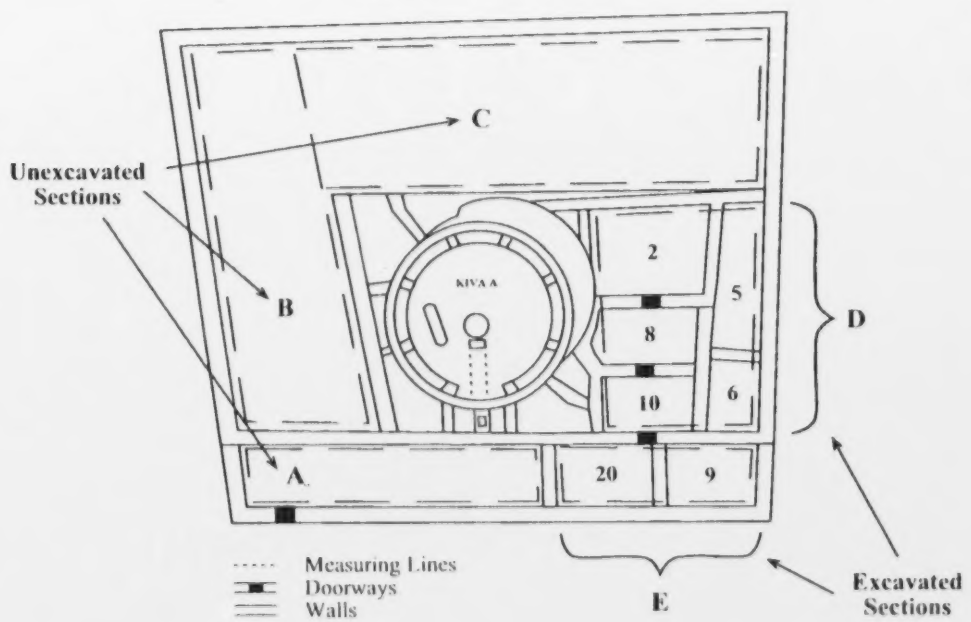
inquiry - a systematic investigation using a few scientific methods to reach a conclusion.

observation - recognizing or noting a factual object or occurrence.

scientific methods - various modes of investigation where the outcome is not predetermined, is based on factual observation and experimentation, and is continually questioned and challenged.

theory - an idea developed from a hypothesis that has been tested and is supported by evidence.

Map of Escalante Pueblo

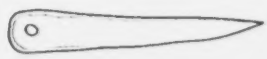


Site Interpretations: Dominguez and Escalante Pueblos

***Read as the closure to* Why Build on the Hill?**

I'm going to read to you some **data** (or observed facts) and **inferences** that relate to common **observations** made by student groups about the Dominguez and Escalante Pueblos. Some of the observations you gathered as data may not be discussed here. Let's remember to discuss those with someone from the Anasazi Heritage Center when we return to the museum, or you can talk with your teacher about them back in the classroom.

The following inferences come from the work of many archaeologists in the region. Let's compare their inferences to your hypotheses and conclusions. But remember, they are not necessarily the absolute correct answers to the question, "Why Build on the Hill?" Many conclusions have changed through time and will continue to change as we learn more. That's how science works. We'll read about the Dominguez site first. The story of Dominguez Pueblo is directly related to that of Escalante Pueblo. As I read, think about how the inferences compare with your own.



Dominguez Pueblo

Data: The Dominguez site is similar to many other sites of the same time period. It consists of three to five rooms in a connected row or L-shaped block with cornfields nearby. Houses were scattered across the landscape, much as they are today in Montezuma County.

Archaeologists' inferences: Dominguez is an example of a typical family home or farmhouse of 850 years ago. Most of the Northern San Juan people lived in small structures like this. The population of this area may have been close to the number of people who live here today, about 20,000, or even greater.

Escalante Pueblo

Data: The walls are thicker, the rooms bigger, and the whole building is a different shape than the surrounding small houses. It is also built with greater architectural skill than the smaller sites. Escalante is a square block of 24 rooms surrounding a central kiva. This same pattern is found at several other large pueblo sites of the 1100s.

Archaeologists' inferences: Escalante Pueblo is called a great house and was probably a community center for the surrounding area of about five miles. A few people lived here, and others likely came for trade, ceremonies, and to hear news from around the region. As in many farming communities, the people probably gathered for seasonal celebrations. The large size and sturdy construction implies that this building was important—just like well-made business centers and churches today. Its location and thick walls made Escalante more defendable from the elements and invaders. No evidence has yet been found of warfare or violent conflict nearby, but Escalante residents may have been cautious anyway.

Data: The artifacts found in the site are not fancier or more abundant than those found in surrounding small pueblos.

Archaeologists' inferences: This indicates that a wealthy family or a powerful elite group of people probably did not occupy Escalante Pueblo.

Data: The walls have carefully placed chinking (small stones in the mortar between the building stones), double course masonry, and well-shaped blocks. These building styles are often found in the Chaco area. (Chaco was a different cultural region to the south in New Mexico, which was occupied in the same time period as Escalante. To see Chaco country, look between the Sleeping Ute Mountain and Mesa Verde.)

Archaeologists' inferences: Several inferences are still debated. The most current is (1) Escalante's builders were inspired by these distant neighbors while designing and building their community center. Chacoan people did not influence this site much more, since few Chacoan artifacts were found in the building. Also, the Chaco culture was declining at the time Escalante was built.

Past inferences include that (2) the builders were male immigrants from the Chaco area who eventually married local San Juan women and blended in with the culture. And (3), the builders were Chacoan warriors who built this defensive site to control the local farming families and extract local resources. Few archaeologists now make these inferences.

Data: This high point provides a clear, long-distance view. More visible here than on the plain below or in the river valley are the sun and moon rise on the horizon, herds of animals off in distant areas, scattered cornfields, and people on the landscape. Many large sites of this time period have commanding views such as those found at Escalante.
Related data: Spiral petroglyphs were found in a few of the Escalante building stones. Spirals such as these are part of solar calendars in other ancient pueblos.

Archaeologists' inferences: A primary purpose for building on the hill was for the view. The view of the sun and the moon on the horizon and the petroglyphs may have helped the residents mark special occasions, like the solstices that indicate planting times, festival days, and change of seasons.

Visitors could see the hilltop village from far away as they traveled to Escalante to celebrate or trade. This location could have been important in a time when there were few roads and no road maps. Also, the distant view of approaching people may have helped alert the pueblo to possible traders or enemies.

Keeping a lookout for distant resources, such as herds of deer, was important for successful hunting. In addition, a few people could monitor many farm fields from a central location.

Data: Higher elevations receive more rainfall.

Archaeologists' inferences: This could have influenced people to settle in the surrounding high area of the Great Sage Plain. Rainfall was important here since the nearest source of constantly flowing water was down the hill at the river. A check dam for catching rain runoff and a possible terrace garden was located where the museum now is. However, this is not why Escalante was built on this small hilltop as opposed to the base of the hill. Its location does not receive much more water than the land closely surrounding it to the south.

Data: The hilltop is more exposed to wind.

Archaeologists' inferences: Wind probably did not influence why Escalante residents chose to build at this site. They probably just tolerated it.

Data: High elevations experience a greater intensity of sunlight.

Archaeologists' inferences: This is true of the entire region, but it did not relate to the reason people built on this small hilltop. Escalante Pueblo does not receive much greater intensity of sun than does Dominguez Pueblo at the base of the hill.

Data: The kiva at this site is larger and much better made than the kiva found at Dominguez. It originally had a wooden domed roof that arched up and over from the stone pilasters seen on the outer wall bench. People could enter only by using ladders through a hole in the roof. The round pit was a fireplace. The rectangular pit is similar to pits at other large kivas, which have been interpreted as foot drums.

Archaeologists' inferences: Kivas were probably used for people to meet, trade, and hold celebrations. Since the kiva is relatively large at this site, more of these kinds of activities took place here than at Dominguez or other small sites nearby.

Data: There are more wild plant resources, such as those clearly labeled on the walk, surrounding Escalante than are found in the farm fields nearby.

Archaeologists' inferences: This data cannot be used since the areas covered by wild plants in ancient times might have been quite different. Hills were less likely to be farmed, so this hilltop was probably covered by wild plants, but they may not have been the same species or as dense. While the plant resources were important, they did not need to be so close by to be used. More important may have been the need to build large sites in areas not suitable for farming. This would leave the arable land for growing food.

Why Build on the Hill? Inquiring about Escalante

Name:_____

Your group is a scientific team formed to suggest a probable answer to the research question, "Why did the people of Escalante Pueblo build their house on the hill?" Your answer must be more than a guess. It must be a hypothesis that you can test.

1. **Make a Hypothesis:** State your group's hypothesis for why Ancestral Puebloans built on top of the hill at Escalante Pueblo.

   _____

   _____

2. **Research Design Using Environmental Observation:** What type of sign information will you look for and what observations will you make on the trail and at the archaeological site to gain evidence to support your hypothesis? Information gathered in a scientific investigation is called data.

   _____

   _____

   _____

3. **Gathering Data about Your Hypothesis:** List at least two pieces of information or observations that relate to your hypothesis. Infer what the data may mean in relationship to the hypothesis.

   Information or
   Observation _____

   Inference _____

   Information or
   Observation _____

   Inference _____

4. **Other Scientific Methods:** List one way other than research of printed information and observation of the environment that you can gain evidence or data that could support your hypothesis.

_____

5. **Conclusion:** What do you conclude based on your data and inferences? Is your hypothesis likely true based on what you read and saw? Why? If not, what other ideas do you have?

_____

_____

_____

_____

_____

Closure: Listen to the site interpretations read by your teacher or group leader. Is your conclusion part of this interpretation, or is it different? Explain in writing, or discuss with your group.

_____

_____

_____

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_____

_____

Context and Clues: Analyzing Rooms with Artifacts

SUBJECTS: Science, Social Studies, Language Arts
SKILLS: Cognitive—knowledge, comprehension, analysis, synthesis
Affective—receiving, responding, valuing
Psychomotor—perception (seeing, touching); physical (walking)
DURATION: 35 minutes, plus 20–40 minutes walking to and from Escalante Pueblo

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—1,2,4 History—2,3,4
Math—3 Geography—1,2
Visual Arts—extension 4,5 Science—1,6

Activity Summary
At Escalante Pueblo, students study the Escalante site map and site features. They analyze the context of a group of artifacts found in a specific room. As a team, they infer the function of that room in ancient times based on their analysis.

Objectives
Students will be able to
1. Explain the importance of artifact context in interpreting an archaeological site.
2. Infer a room's use based on the artifacts found in it.
3. Appreciate that artifacts found at an archaeological site are more valuable in context than in a private collection.

Materials
- *Context and Clues* student notebook for each student
- *Context and Clues* group leader instructions (includes *Escalante Pueblo: Room Descriptions*, and *Escalante Pueblo: Room Interpretation*)
- Artifact kit from Escalante Pueblo and surrounding area (AHC)
- Photos of artifacts found in Escalante Pueblo and surrounding area (AHC)
- Clipboards (AHC)
- Pencils

Vocabulary

artifact	inference
ceramic	lithic
context	pot hunter
faunal material	room feature
floral material	utilitarian

Procedure

Place
Start at the ramada near Escalante or in the museum, and continue the activity at Escalante Pueblo. Closure can occur at Escalante or back in your classroom.

Activity
1. Working in a small group, students gather in a circle under the ramada near Escalante. Group leaders facilitate as students study and handle the objects in the Escalante Pueblo artifact kit. The artifacts are a sample of what they will read about later in their room analysis.
2. Each group leader distributes a room description and a set of artifact photos for one room to their group. Students use a map to find their room.
3. Using the room description, direct observation, and the site map, students take notes about the location and room features of their room in the *Context and Clues* student notebook.
4. Students take notes on the type and arrangement of the artifacts that were found in the room during excavation. They study the photos of the same artifacts.
5. Group leaders help students infer a function of their room based on their observation notes, artifact lists, and discussions.

Closure

At Escalante, the group leader reads the archaeological interpretation of the room summarized from the official site report, and compares the report interpretations with those given by the students. Students learn that there are no right or wrong interpretations about the rooms at Escalante. The most valid inferences are those well supported by the observed evidence.

Back in the classroom or at Escalante with the whole class, share the results of each group's research. Discuss how interpreting all of the rooms together creates an understanding of what life was like at Escalante for the Ancestral Puebloans.

Discuss how the results would differ if the artifacts of different rooms were mixed together or scattered before an archaeologist could analyze them. Reinforce the idea that any artifact found in a natural setting should be left in context for future archaeological study.

If the group is also doing *Why Build on the Hill?,* students can relate pertinent information on room context to their hypothesis. Discuss if the newly analyzed information on artifact context influences their original inquiry conclusions.

Helpful Hints

To save time during the field trip, teachers may check out an artifact kit from the Anasazi Heritage Center and familiarize students with artifacts in the classroom prior to their visit. Also, group leaders can take notes about the room, artifacts, and context in one notebook for the group during the activity. Team members can then copy the information into their notebooks back in the classroom.

This activity works well with one small group going up the hill to Escalante and studying its room separately from other groups. Or, you can divide up to 20 students into six or seven groups that analyze different rooms all at once and then immediately compare their inferences about each room while still at the Escalante site.

During inclement weather, you can do this activity in the multiuse room using the Escalante site maps, room descriptions, and Escalante Pueblo artifact kit. Divide the multiuse room into stations so that students can meet in separate corners to discuss their assigned rooms.

To better handle the room descriptions in the field, copy each description sheet onto card stock and laminate.

Extensions

Pithouse Interpretation: Ask students to look carefully at the pithouse in the museum's Main Gallery. Have them infer what activities occurred in the pithouse based on the context of the displayed artifacts.

Peer Review and Site Report: Have students critically review each other's artifact list and conclusions. Ask students to assess if the inferences made about the room functions are supported with evidence. Each group report that "passes" the review can be added to a site report that is "published" (on your photocopier) and put on display in the classroom.

Conservation Art: Students learn that there are ways to observe, record, and remember the beautiful artifacts seen on a site without destroying their context. Have students study a decorated ceramic sherd from the Escalante artifact kit or look at a sherd in context at another site. Ask them to sketch the sherd and record information about it. Later in the museum or back in the classroom, students can reproduce the exact sherd design on thick leather, clay, or cardboard. Leather pieces painted with white shoe polish and black markers make excellent black-on-white replicas. Attach a magnet to the back of each replica so it can be placed on a refrigerator. The artifact information can be put on the back with tape or on a paper frame around the sherd replica.

Assessment

Behavior: Group leaders report informally about each student's participation in the activity.

Student notebooks: Assess student notebooks for completeness, level of reasoning, and accuracy appropriate to the grade level. Depending on the sophistication of your students, you may want to ask them to conduct peer reviews of the notebooks (see Extensions).

Teacher's Background Information

This activity puts students in the role of principal investigator at an archaeological site. It is the investigator's job to explain what was learned in an archaeological project. Summarizing investigation results and drawing inferences or well-reasoned conclusions about a room and, eventually, the entire archeological site is one of the most exciting and challenging roles of the archaeologist. All inferences must be well supported with recorded data about site artifacts within context to stand up to the scrutiny of peer review.

Authenticity is high in this simulation because the artifacts, maps, and illustrations on the room cards are derived from the official archaeological site report. These are the raw data that archaeologist Judith Hallasi used to make her conclusions about Escalante in 1976. Some of these conclusions are still debated by archaeologists today.

A majority of information an archaeologist gains about an object comes from its context. A fun demonstration of this concept is found in the *Project Archaeology* activity "Context." Students analyze modern rooms based on the context of a sample of artifacts from those rooms.

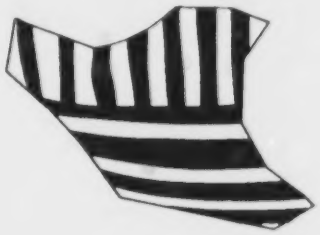
Context is important in archaeological survey as well as in excavation. In a survey, information gained about a site comes from what is immediately observable on the surface of the ground. The site walls and the exact location of surface points, sherds, and other artifacts are recorded. When information about a site can be gleaned from the surface, the destructive process of excavation is not necessary. The site remains less disturbed and better preserved through time.

Unfortunately, weather and people easily destroy the context for surface artifacts. People enjoying outdoor recreation frequently discover an archaeological site or artifacts. Some pick up the interesting things and move them to another place on the site. These seemingly innocent acts destroy context and site information.

Under state and federal law, artifacts on public lands must be left in place and sites left undisturbed. Discoveries of rare or remarkable artifacts should be reported to the land managing agency, or in the case of private lands, to a local archaeologist or the State Historic Preservation Office.

Some people who collect artifacts and excavate sites on public lands are engaged in an illegal market. They may be armed with weapons and are to be considered dangerous. Students should never approach someone they see collecting artifacts or excavating sites. Instead, they should record information about the people—their physical description, what they were seen doing, the license number of their vehicle—and report them to law enforcement authorities immediately. The Archaeological Resources Protection Act allows for rewards for those providing information that leads to the arrest and conviction of people disturbing sites.

Context and Clues builds an intrinsic understanding in students of the purpose and meaning behind the archaeology conservation laws. An appreciation for archaeology conservation motivates students to work for site protection in the future.



References

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Context and Clues: Analyzing Rooms with Artifacts

Activity Summary and Instructions

- *Instructions appear in italics; read the rest of the text to the students.*
- *As the group leader, you will help students work as a team to locate their assigned room in Escalante Pueblo and study the context of a group of artifacts found in that room.*
- *You will then help students infer the function of that room in ancient times.*

Read to students gathered in a circle under the ramada near Escalante (Introduction):

Archaeologists learn about the life of the Ancestral Puebloans using **artifacts** found at sites as clues. It is very important for archaeologists to know the **context** of where an artifact was found. The context of an artifact is similar to the context of a word on the page. With an unfamiliar word, the reader looks at the surrounding words and sentences to learn its meaning. In archaeology, the context of an artifact includes its exact original location, such as in a room or a trash pile; what other artifacts were near it, such as cooking tools or ceremonial objects; and what kind of placement it had, such as carefully buried versus dropped on the floor. All of these details help to determine what an artifact is, how it was used, and when and how it was made. Thus, knowing the context stories about artifacts fills in chapters of the whole Ancestral Puebloan story.

Read while still under the ramada:

1. *Escalante Artifact Kit.* For the next 10 minutes, we will gain familiarity with the objects in the Escalante Pueblo artifact kit. The artifacts are a sample of what you will read about later in your room analysis. Archaeologists sort artifacts into categories that help them understand a site and make inferences about what occurred there. There are two different methods of artifact categorization on the artifact list of your room descriptions. The first relates to the group of artifacts found with the specific artifact. Often the artifacts in one area can be tied to a certain activity, such as cooking, arrow making, or storage. The second category relates to the material from which the artifact is made. This is a more basic sorting method, since little understanding of how the object was used or its meaning is needed.

Read as you pass around the artifacts from each category one at a time:

- The first material category is **ceramics**. Ceramic objects are made of clay and then fired. Most ceramic artifacts are pottery pieces or sherds.
- The second material category is **lithics**. A lithic is anything made of stone. The most common lithic artifacts found are flakes, which are pieces of stone broken off during the construction of a knife or arrow point. Other lithics include grinding stones, polishing stones, and pigment pallets.
- The third material category is animal, or **faunal**. Most faunal artifacts are made of bone. These include awls, scrapers, weaving tools, and beads.
- The fourth material category is plant, or **floral**. Most floral material deteriorates in a short amount of time, so little is left. Small pieces of yucca cordage and occasionally portions of baskets or sandals are the common plant artifacts found.

Pass around copies of the room description and artifact photos for your group's assigned room, and continue to read:

2. *Finding the Assigned Room.* Take these cards and this room description to our assigned room in Escalante Pueblo. Quickly find the room by using the map of Escalante Pueblo printed in your student notebooks. For this investigation, it is OK to step off of the cement path. However, DO NOT step, lean, or sit on the walls. You can get into most rooms by walking through doorways or stepping OVER the walls. If you see an artifact, please leave it in place. Do not go into the kiva.

Read after students have found their assigned room:

3. *Room Features Notes.* Use 5 minutes to take notes about your room's location and features from the room description, site map, and direct observation of the room walls and floor. Notice what rooms are next to this one in the pueblo, the actual construction of the walls, and **room features,** such as doorways, shelves, plaster, or fire pits. If no features are still visible, look for them in the room description.

***Continue reading while the students are in their assigned rooms*:**

4. *Artifact Notes.* For about 10 minutes, take notes about the artifacts listed in the room descriptions and displayed on your artifact photos. Use sections a, b, and c, in your student notebook.

    a. Artifact types: List three or four types of artifacts found in this room. You may notice many of similar construction material, kind of use, or style. Discuss with your group the significance, if any, in the total number or types of artifacts listed. For example, are there a lot of pot sherds from long-distance regions? If yes, could this be an immigrant family, or were the items brought here by traders? These types of inferences are needed to interpret your room.

    b. Artifact groups: Describe the artifact groups in your room. How many are there, and where were they located? What story do the groups tell? Is there any possible meaning in their arrangement? For example, cooking pots found around a fire hearth implies a cooking area or kitchen.

    c. Other artifact observations: Discuss with your group and record other observations about your room and its artifacts.

5. *Room Use Inference.* Infer a function of the room based on your observation notes, artifact lists, and group discussions. Start by brainstorming ideas about how the room may have been used. Let's all participate! No idea is right or wrong. Then let's come to an agreement about which idea is most likely the best based on the evidence presented in your notes. Record this idea in your notebooks. We'll spend about 5 minutes doing this.

Read to the students for closure:

Now I'll read the archaeological interpretation of each room from the official site report. Then we'll compare the ideas in this site report with the results of your investigations. Once we interpret how all of the rooms at Escalante were used, we can better understand what life was like here for the Ancestral Puebloans. But, let's hold that discussion later in the classroom with your teacher.

How would the results of your investigations have been different if the artifacts from the various rooms were mixed together or separated before an archaeologist analyzed them? Remember, any artifact found in a natural setting should be left in context for future archaeological study.

Vocabulary
Use the following list as a reference for this activity.

artifact - any object made or used by humans.

ceramic - artifacts made of clay and then fired, such as pottery pieces or sherds.

context - the relationship artifacts have to each other and the situation in which they are found.

faunal material - artifacts that are composed of various parts of an animal.

floral material - artifacts that are composed of various parts of plants.

inference - a reasoned idea, interpretation, or conclusion that is reached based on evidence or observations.

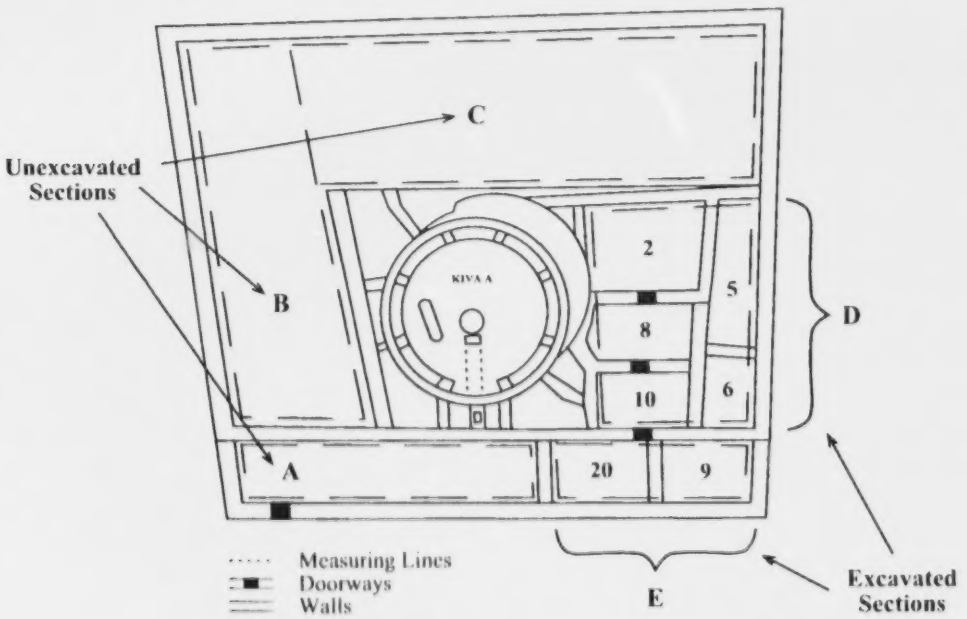
lithic - a class of artifacts that are made of stone material.

pot hunter - a person who digs or collects pots from archaeological sites without permission for his or her own use or to sell for profit.

room feature - something that is built into a room such as a fire hearth, paving stones, or a grinding bin.

utilitarian - of or relating to the practical and perhaps everyday use of an object.

Map of Escalante Pueblo

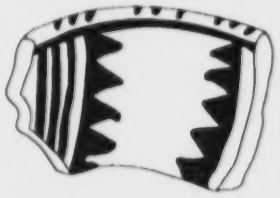


Escalante Pueblo: Room Descriptions

Room 2

Room Features

This room had a T-shaped doorway to the south, a gray plastered floor, and a fire pit or fire hearth in the center. Charcoal was scattered across the floor.



Artifact Arrangements

Four artifact groups in Room 2 could indicate activity areas.

Group 1
- concentration of bone fragments from deer, cottontail, and dog
- bone awl that shows polish (from piercing holes in leather)
- 3 polishing pebbles (for smoothing the outside of pottery vessels before being fired)

Group 2
- small bone cluster
- fragment of a bone tool
- polishing stone

Group 3 (surrounding fire hearth)
- 45 sherds, mostly corrugated and gray wares, including one pot base (from vessels used for storing and cooking food)
- 2 manos (handheld corn grinding stones)
- hammerstone (used to pound and break things)

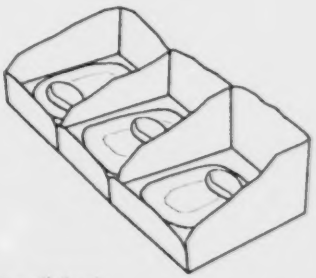
Group 4
- tool cluster, including bone weaving tool, two hammerstones of imported fine quartzite, scraper (for cleaning hides), rubbing stone, rubbing stone with hematite stains (for grinding pigment), an unused hammer, and one utilized fine quartzite flake (for scraping or cutting)
- 4 nonutilized quartzite flakes (from point and knife production)

Scattered artifacts
- side-notched stone arrow point
- an arrow shaft straightener
- bone scraper (used in cleaning hides or scrapping food stuff from containers)
- bone bead, well polished from long use
- charcoal

Escalante Pueblo: Room Descriptions

Room 10

Room Features
This room had masonry walls, clay plastered floor with gravel areas at the doorways, some evidence of grinding bins that were removed or altered, and two doorways, the northern one T-shaped. No fire hearth was evident.



Artifact Arrangements

Scattered artifacts
Most of the artifacts were scattered randomly in no clear clusters.

Artifact Totals by Materials Category

Ceramics
- 6 corrugated sherds (from various utilitarian dishes)
- 15 local black-on-white sherds (from several different fine ceremonial or serving dishes)
- 2 black-on-white sherds from Flagstaff area (trade wares)
- 7 black-on-red, or polychrome, sherds from south of this region (trade wares)

Lithics
- 2 grooved axes
- grinding stone (used to grind various things)
- 2 hammerstones
- slab mano (used in grinding corn)
- arrow point
- utilized flake (used as a scraper or small knife)
- nonutilized flake (broken from a stone during arrow point manufacturing)
- jet pendant (jewelry)

Bones
- 3 bone fragments
- turkey bone tube (possibly used as a whistle or jewelry)
- 2 awl splinters (awls are used to pierce leather when sewing garments or tools)
- 7 whole animal bones

Other
- grinding bin pieces (from corn grinding station or area)

Escalante Pueblo: Room Descriptions

Room 8

Room Features

This masonry room had a T-shaped doorway to the north and south, a gray plastered floor, partially plastered walls, and a posthole in the center.

Artifact Arrangements

Three artifact groups in Room 8 could indicate one pot break and two activity areas. There were a few other scattered artifacts.

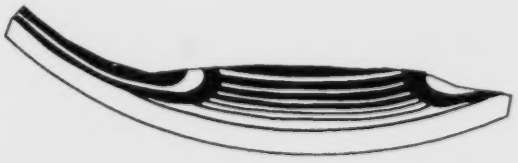
Group 1
- variety of bones
- cluster of mixed sherds from utilitarian pots (used for daily tasks such as cooking and holding water)
- black-on-white pot sherd from a decorative or ceremonial vessel

Group 2
- cluster of corrugated sherds from one utilitarian pot
- 9 black-on-red sherds of a style found near the Grand Canyon (traded)
- weaving tool with a broken tip
- mano fragment (grinding stone)
- 2 black-on-white sherds shaped on the edges; one was chipped into a circle with edge polishing (possibly to be used as jewelry or a tool to polish new ceramic vessels)

There was some indication that the broken mano fragment was used as a grinding surface to round the edges of the sherd and to regrind the broken weaving tool.

Group 3
- rectangular mano (grinding stone)
- stone drill point (for making holes in stone or wood)
- long side-notched stone knife point (side notches were used when the knife was tied, or hafted, onto a wooden handle)

Miscellaneous artifacts
- 2 chipped stone flakes (probably from making arrow points)



Escalante Pueblo: Room Descriptions

Room 9

Room Features

This room had a partially plastered floor. There were two small square doors connecting to rooms to the north and east and one large square door to the outside of the pueblo. There was a large fire pit and a large ash pit in the center of the room. A dense scatter of pot sherds and bones covered the floor.

Artifact Arrangements

Five artifact groups in Room 9 could indicate activity areas.

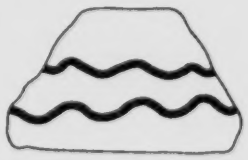
Group 1
- variety of bones
- 23 sherds (pieces of broken pottery, about half from local varieties of mostly gray and corrugated cooking and storage pots, and half from finer black-on-white serving or ceremonial vessels)
- 3 flakes (small pieces of stone broken off a core piece during tool construction)
- broken stone point that was used as a scrapper (to clean hides, bark off wood, or food from dishes)

Group 2
- 12 sherds (from local varieties of mostly grey and corrugated cooking and storage pots and a few from black-on-white serving or ceremonial dishes)
- 14 bones (from a turkey skull, deer or bighorn sheep, and small mammals)
- 3 flakes

Group 3
- 6 sherds (from local varieties of gray and corrugated cooking and storage pots and one from a black-on-white serving or ceremonial dish)
- ground stone (for grinding various things)
- flake

Group 4
- 7 sherds (from local varieties of black-on-white serving or ceremonial dishes, one was corrugated, and one was from a style imported from near the Grand Canyon)
- half a plain gray ceramic smoking pipe

Group 5
- 2 corrugated sherds (from a cooking or storage pot)
- 3 bones
- flake



Escalante Pueblo: Room Descriptions

Room 20

Room Features

This masonry room had a T-shaped doorway to the north into Room 10, a gray plastered floor with five ash pits and one grinding pit, partially plastered walls, and a roast or cooking area on the southwest wall.

Artifact Arrangements

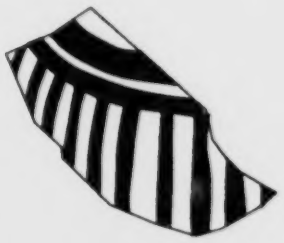
Two artifact groups in Room 20 indicate one pot break and two activity areas. There were a few other scattered artifacts.

Group 1

- 15 pot sherds (from at least five different vessels, one local black-on-white serving dish or special container, one black-on-white bowl traded from near Flagstaff, a few black-on-red pieces traded from south of this region, and many from local style gray and corrugated cooking and storage pots)
- chert flake (broken from a stone during stone tool production)

Group 2

- bone fragments from turkey, jackrabbit, and cottontail
- 4 sherds



Escalante Pueblo: Room Descriptions

Rooms 5 & 6

Room Features

Rooms 5 and 6 were one continuous room in the original occupation. One small square door at the south end of Room 6 opens into Room 9. A small floor pit, which contained a pot, was the only other structural feature. The unplastered floor had scatters of ash and trash and rubble fill. Burned roof beams covered the floor. There was no evidence of a fire hearth.

Artifact Arrangements

Group 1
- obsidian scraper (used for cleaning hides and other tasks; obsidian was traded from south of the region)
- 3 chipped stone flakes (from the construction of stone tools)
- bone fragments
- 2 sherds (pieces of ceramic)

Group 2
- 6 sherds
- 2 bone fragments
- obsidian flake

Group 3
- 27 sherds (16 were corrugated from cooking or storage pots; the remainder were from various local black-on white serving or ceremonial vessels)
- bone fragment

Group 4
- 80 corrugated sherds (from utilitarian cooking or storage containers)
- 3 sherds from local varieties of black-on-white vessels
- 3 multicolored sherds traded from southeast of this region
- 2 bone fragments displaying butcher marks
- scraper
- core-hammerstone (used to flake off smaller stone tools and as a hammer)
- 4 chipped stone flakes
- utilized obsidian flake

Group 5
- deer scapula scraper
- bone tool fragment
- deer toe bone with butcher marks
- obsidian flake
- 5 corrugated sherds

Group 6
- 48 sherds (32 corrugated; the remainder are of multiple varieties)
- 2 burned bone fragments
- stone flake

Group 7 (south end of room near doorway)
- bone awl (for making holes in leather and baskets)
- worked bone piece
- unutilized bone
- core-hammerstone

Escalante Room Interpretation

The following room interpretations are based on the 1976 Hallasi excavation report for Escalante Pueblo. These interpretations are not the only way to explain the Escalante rooms. They are inferences—just like the ones you made based on your research. Other inferences supported by factual data are valid as well.

Room 2. The diversity of personal and utilitarian artifacts in this room indicates that it was part of a two-room family residence that included Room 8. It was used for cooking and as a workroom for making various things, including bone tools and arrows.

Room 8. Part of a two-room family residence, which included Room 2. The evidence of many different types of utilitarian artifacts indicates that this room was a work area.

Room 10. The floor features suggest that this room was a grinding room, and that the grinding bins were removed from the floor. Later the room was used for a trash deposit. Lone artifacts, such as the two axes, the hammerstones, and the slab mano found on the floor, might have been used in the grinding process and were left on the floor after its first period of use. Many of the animal bones were part of the trash deposited when the room use changed.

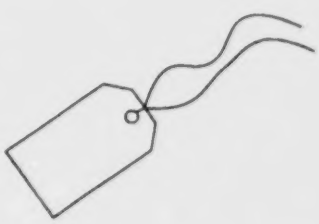
Room 20. The floor artifacts and the floor features, including a fire hearth, indicate that the room was used for cooking and preparing food. It may not have been a general living room, since there were few other artifacts from daily life.

Room 9. The abundance of sherds and bone on the floor probably reflect a food preparation area. The floor features of a large fire pit or hearth and a large ash pit also support this inference.

Room 5. The clusters of artifacts suggest no definite activity concentrations. The length of the room, the lack of a fire pit, and the presence of a storage pot in the floor suggest that this long room might have been used as a storage room. The clusters of artifacts might represent utility areas or accumulations of trash.

Room 6. Evidence suggests that the roof burned and fell on top of the floor. The large accumulation of sherds on the floor may be explained by vessels that had been suspended from the roof and fell onto the floor during a fire. Room 6 was part of Room 5 until divided in a later time period. This one large room was entered from the doorway on the south wall. The availability of light near the door may have allowed that portion of the room to be used as a work area. This is where one accumulation of bone working tools is located.

Rooms 10, 20, 9, 5, and 6 may have been special function rooms that served for grinding, cooking, and storage. They may have been used by the family that lived in Rooms 2 and 8, or they may have been shared by the whole community.



Context and Clues: Analyzing Rooms with Artifacts

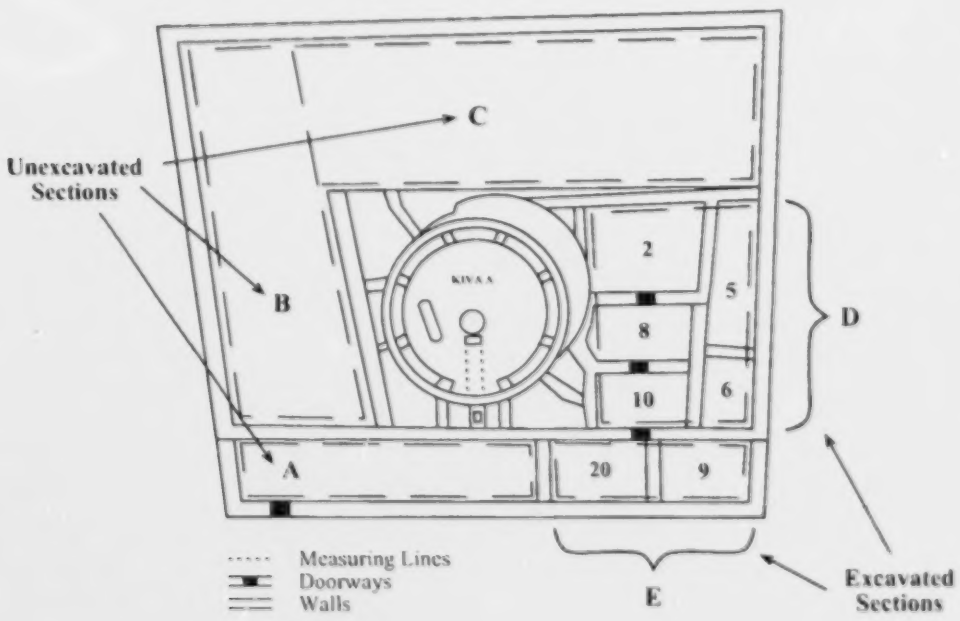
Name:_____

Listen to your group leader read the introduction to this activity. Take notes on the topics listed below as part of your room study. The details in your notes will help you make an inference about how your Escalante Pueblo room was used.

1. **Escalante Artifact Kit**
   Listen as your group leader reads about the types of artifacts that were located at Escalante Pueblo. Handle all of the artifacts with care; they are more than 800 years old! These are similar to the artifacts found in your assigned Escalante Pueblo room.

2. **Finding Your Assigned Room**
   Use the following site map to locate your assigned room number. Then walk to it to begin your study. As you walk through the site, **do not step, lean, or sit on the ancient walls!** You may step over the walls to go into all the rooms except the kiva. Look at the kiva from behind the square rock line that is just back from the round kiva edge. Do not drop anything into the kiva. If you do, it must stay where it falls.

Map of Escalante Pueblo



3. Room Features Notes

a. Location of room in pueblo_____

b. Floor or wall features (things built into the room)

_____

c. Number and kinds of doors

_____

4. Artifact Notes

a. List three or four types of artifacts found in this room. You may notice many of similar construction material, kind of use, or style.

_____

_____

_____

b. Describe the artifacts groups in your room. How many are there, and where were they found? What story do the artifact groups tell? Is there any possible meaning in their arrangement?

_____

_____

_____

c. What other observations about context can you make?

_____

_____

5. Room Use Inference

What can you infer was the main use of this room? What led you to this conclusion?

_____

_____

_____

Listen to your group leader read the archaeological interpretation of your room based on a similar analysis done by an archaeologist in 1976. Was your inference or interpretation of the room's use similar?

_____

Mapping and Measuring: Estimating Population through Site Area

SUBJECTS: Science, Social Studies, Math
SKILLS: Cognitive—comprehension, application
Psychomotor—physical (walking)
DURATION: 1–1.5 hour minimum

COLORADO MODEL CONTENT STANDARDS:
Reading & Writing—2,4 History—2,3,4
Math—1,3,4,5,6 Geography—1,2,5
Visual Arts—4 Science—1,6

Activity Summary
Students estimate the population of Escalante Pueblo by measuring the site's area and applying a standard formula to the totals.

Objectives
Students will be able to
1. Use tape measures to gather data.
2. Perform basic math functions such as calculate site area and estimate population.
3. Explain that math can provide archaeological understanding.

Materials
- *Mapping and Measuring* student notebook for each student
- *Mapping and Measuring* group leader instructions
- Tape measures (AHC)
- Clipboards (AHC)
- Pencils

Vocabulary
excavated population

Procedure

Place
Gather all data at Escalante Pueblo; the calculations can be done at the site or back in the classroom.

Activity
1. Divide the students into five groups (at least two students each). Assign each group a section of Escalante Pueblo to measure. (A map is included in this lesson plan, as well as in the student notebooks.) You can have all groups take their measurements at the same time, or assign one group at a time in rotations lead by your group leaders.
2. Students measure the width and the length of their section of excavated rooms (Sections D and E). They then multiply the numbers to calculate the section area.
3. Students add the areas of Sections D and E. They then calculate the average area of the excavated rooms in both sections by dividing by the number of excavated rooms (7). This number is used again in step 6.
4. Students repeat the previous steps with the unexcavated sections (A, B, C), and total the area of the unexcavated spaces.
5. Students divide the total area of the unexcavated space by the average area of one room to estimate the number of unexcavated rooms.
6. Students add the estimated number (from step 5) to the number of excavated rooms (7), and estimate the total number of rooms.
7. In conclusion, they multiply the estimated total number of rooms by 1.5 people to determine the possible number of inhabitants at Escalante Pueblo. (Archaeologists use this formula to estimate populations in this area.)

Closure
The closure of this activity must be done with the whole class together and will most likely be done by the teacher. Nevertheless, we have included the closure narrative on the group leader instructions. Read the closure to the students from all groups at the end of the activity.

Helpful Hints:

If you are limited on time during your field trip, make your section assignments before arriving. During the field trip, either one group at a time in rotational stations or all groups at once can go up the hill and simply measure the site. All of the other calculations can be done in the classroom.

You can also save time by asking one person to read all of the instructions and another to record the measurements taken by each group while at the site. Then share the data with the whole group or class later before making the remaining calculations.

Extensions

Calculating Rooftops: Have students calculate the amount of trees needed to cover the rooftops of Escalante Pueblo. Discuss the impact on the forest that occurred from cutting enough trees for several pueblos in the area. Check with the museum educator for more information on this extension.

Assessment

Behavior: Group leaders report informally on student attentiveness and participation in discussions.

Student notebook: Assess the student notebook for completeness appropriate to grade level. Because numbers can vary depending on how the measurements are taken by each group, create a grade sheet from the measurements your students make. The last question in the student notebook—public space and population estimates—is simply designed to generate a group discussion.

Teacher's Background Information

This activity addresses two important aspects of archaeology: (1) using math to interpret artifacts and archaeological sites and (2) inferring population size to gain an understanding of life in a village or a region.

Math in a school classroom can seem like a set of rote and abstract activities. Yet in authentic settings, math becomes a powerful tool. It can answer questions in archaeology that cannot be answered in any other way. Calculations of site area, population size, and the amount of natural resources used are but a few examples.

Was Escalante a thriving and busy trade village with a lot of people living there, or was it a quiet home to only a few? The number of people living in an area influences the pace of life, social activities, and required political structure. A good example from modern times is the type of lifestyle found in rural versus urban settings.

Population also influences the intensity of resource use in an area. More people require more cornfields, herds of deer for meat, and wild food sources. Houses for large populations require many trees for roofing material, building stones for walls, and shrubs and trees for heating fuel.

The population of Northern San Juan Ancestral Puebloans at the time Escalante was occupied varies from 10,000 to 50,000 people, depending on the archaeological formula for estimation. Imagine the difference in lifestyle and effect on resources between those two extreme estimations.

Many archaeologists feel that several factors influencing the final abandonment of the region in the 1300s were related to high population density in communities. The depletion of fuel wood and construction timber probably was significant. Also, competition for enough farmable land to support large groups of people could have caused conflicts between neighboring communities.

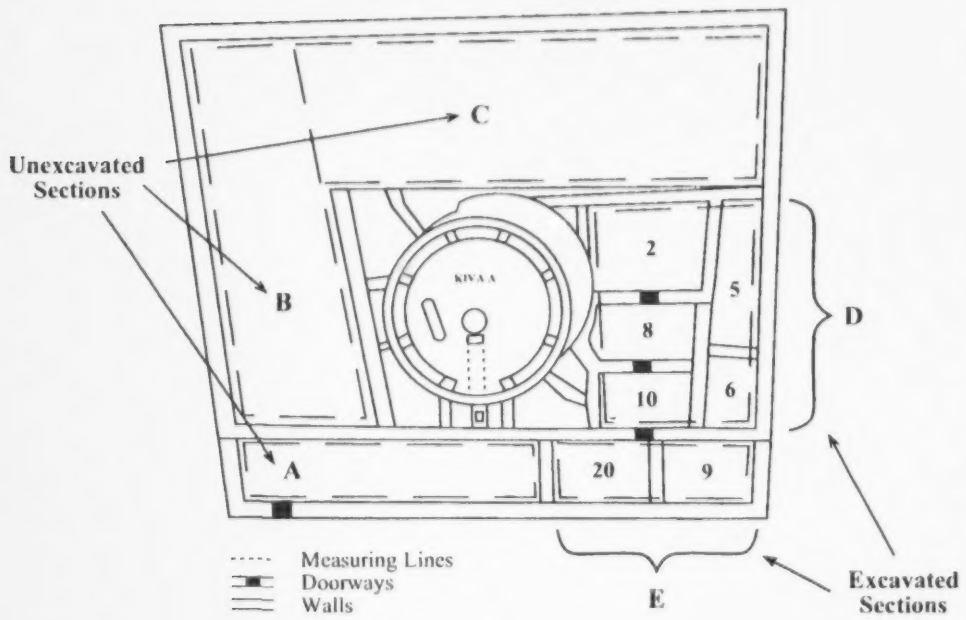
References

Hallasi, Judith, Alan D. Reed, Adrian S. White and David A. Breternitz
1979 *The Archaeology and Stabilization of the Dominguez and Escalante Ruins.* Bureau of Land Management Colorado, Cultural Resource Series, No. 7.

Thompson, Ian
n.d. *The Escalante Community,* Southwest Natural and Cultural Heritage Association, Albuquerque, NM.

Varien, Mark D., Ronald H. Towner, Tobi Taylor and David R. Abbott
2000 *Kiva Volume 66, 1.* The Arizona Archaeological and Historical Society.

Map of Escalante Pueblo



Mapping and Measuring: Estimating Population through Site Area

Activity Summary and Instructions

- *Instructions appear in italics; read the rest of the text to the students.*
- *In this activity, you will help your group take measurements and calculate the area of its assigned section in Escalante Pueblo.*

Read to the students at the Escalante viewing platform (Introduction):

How many people do you think lived at Escalante Pueblo? Archaeologists use the number of rooms at an archaeological site to estimate its population. But we don't know the number of rooms at Escalante because the site is only one-third excavated. So, first we must estimate the total number of rooms so that we can calculate the population of Escalante. We will follow the steps in your notebook, and complete each calculation to make your population estimate.

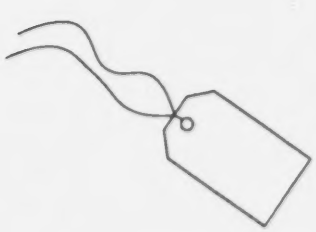
Assign sections:

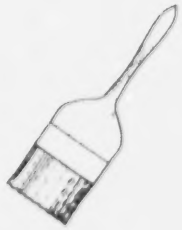
Our group will measure one assigned section. Our assigned section is _____. We will add our calculations to those of the other groups later. While measuring, **do not step, lean, or sit on the site walls.**

Instruct the students to walk to their assigned area:

Calculate the area of our assigned section. Measure the length and the width (using the perpendicular sides) of the area; then multiply the numbers. We will use the long roll-up tape measures. Measure down the middle of the walls.

You will complete the remaining calculations for estimating the site population later with your teacher when all the groups are together. Let's rejoin the class.



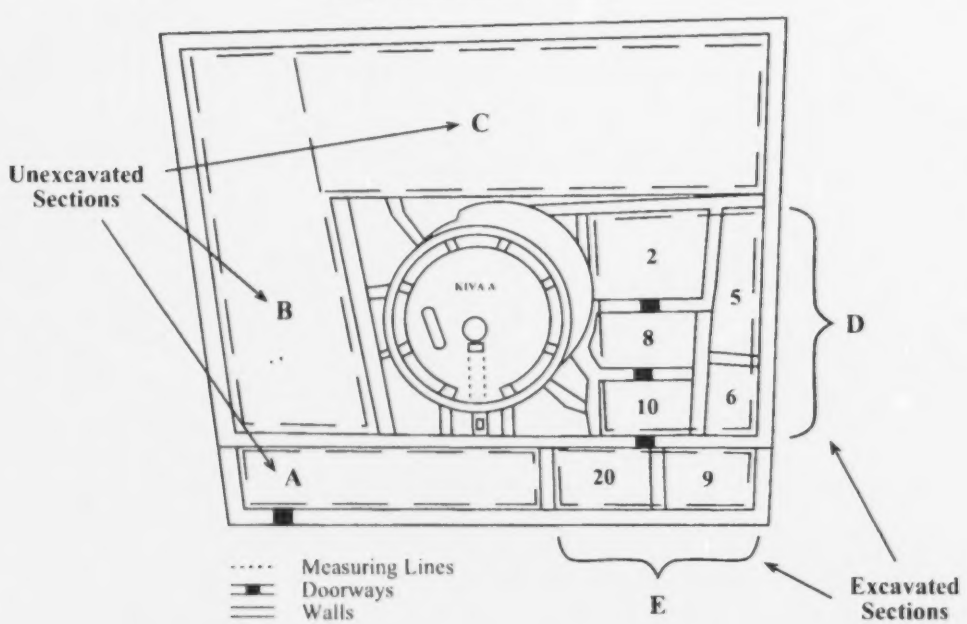


Lead the students to meet the other groups, and then aid them in retrieving the other groups' data and doing the calculations. Follow the equations in the student notebooks to complete the activity.

Either you or the teacher will read this to students when all calculations are complete (Closure):

A common question at Escalante is how many people lived here. This activity is one way to answer that question, but we really can't know for sure. The answer is complicated by the fact that relatively few artifacts were found that were used in daily living. Far more storage and trade items were found. Some archaeologists interpret that to mean that fewer than 1.5 people per room lived here, and that the pueblo had a lot of public space for trade, work, and ceremonial activities. If Escalante Pueblo was a public place, how would you adjust your population estimation?

Map of Escalante Pueblo

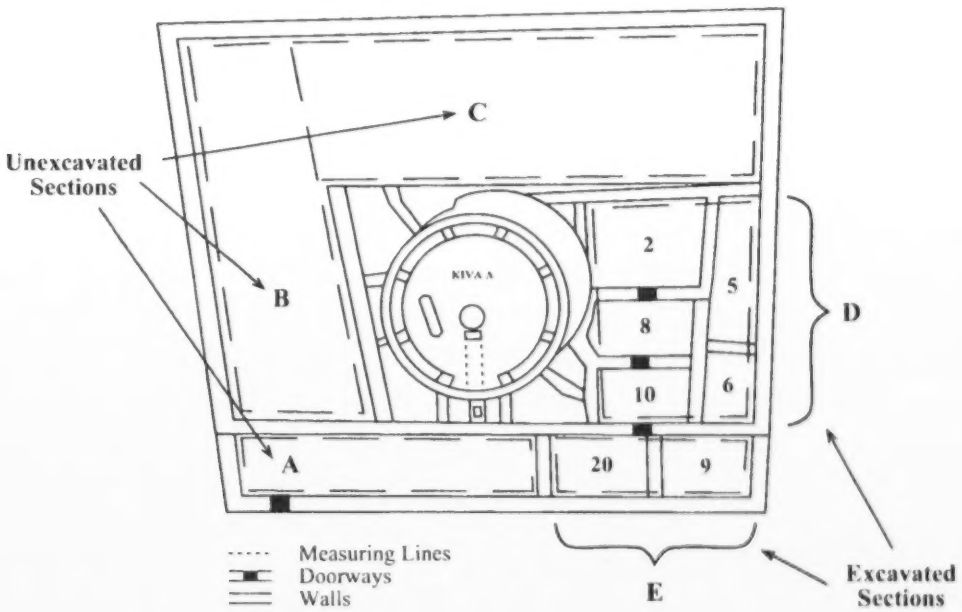


Mapping and Measuring: Estimating Population through Site Area

Name:_____

Listen to your group leader read the introduction to this activity.

Map of Escalante Pueblo



1. **All portions of the site must be measured:**
   Which type of section are you measuring? (circle one) Excavated Unexcavated

   Record the letter of the section you are measuring: _____

   Remember, **do not step, lean, or sit on the ancient walls** while you walk through the site to complete your measurements. If you find any artifacts, please leave them in place.

2. **Calculate the area of your section:**
   Using the role-up tape, measure the length and the width (perpendicular sides) of your area. Then multiply those numbers together.

   Length side 1: _____ft. X Width side 2: _____ft. = _____ sq. ft.

3. **Calculate the average area of excavated rooms:**
Total the areas of the excavated rooms (not including the kiva) by adding the area of Section D and Section E together.

Area D _____ sq. ft.
\+ Area E _____ sq. ft.
_____
Total excavated area _____ sq. ft.

Divide the total area by the total number of rooms.

Total excavated area: _____ sq. ft. number of rooms (7) = _____ sq. ft.
Average area per room

This number will be used again later in the exercise.

4. **Calculate the area of unexcavated sections:**
Repeat step 2 for the unexcavated sections. Total the areas of unexcavated sections by adding the areas of A, B, and C together.

Area of unexcavated Section A _____sq. ft.
\+ unexcavated Section B _____ sq. ft.
\+ unexcavated Section C _____sq. ft.
_____
Total unexcavated area _____ sq. ft.

5. **Estimate number of unexcavated rooms:**
Divide the total area of the unexcavated sections by the average area of one room.

Total unexcavated area _____ sq. ft. average area/room _____ sq. ft. = _____
estimated number of rooms in unexcavated area

6. **Estimate the total number of rooms:**
Add the estimated number of unexcavated rooms to the number of excavated rooms.

7 + _____ = _____ estimated number of rooms

7. **Determine the possible number of inhabitants at Escalante Pueblo:**
Multiply the estimated room number by 1.5 people/room. (Archaeologists use this formula to estimate population in this area.)

Estimated number of rooms _____ X 1.5 people/room = _____ estimated number of people

The population formula was established for sites that are family residences without much public space. Public space is that which many people use like a shopping center or park in modern times. If several of these rooms were public spaces, would you adjust the population up or down?

UP / DOWN

Appendixes

A. Correlation with Colorado Model Content Standards

B. Glossary

C. Annotated Bibliography and Recommended Readings

D. Teacher Evaluation Form

Cortez B/W, reworked pot sherd, pendant

stone flake/ scraper

stone point

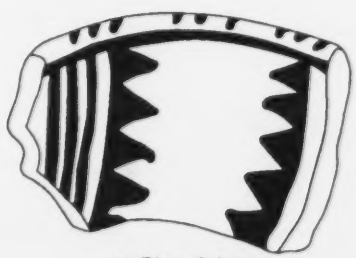
stone axe/ hammerstone

bone needle

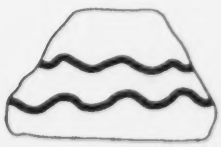
stone axe with hafted handle

stone pendant

ceramic disk bead



McElmo B/W, rim sherd



Cortez B/W, sherd

bone scraper

Escalante Pueblo Curriculum

Correlation with Colorado Model Content Standards

The following chart connects specific lesson plans and activities with the general Colorado Model Content Standards. If an X appears in the column, some aspect of the lesson fulfills a portion of that standard between the 4th - and 7th - grade levels. The chart is intended to guide teachers in choosing activities that may meet standards for their classrooms.

	The Field Trip Core			Pueblo Culture		Nurturing Environment		Archaeology in Action		
Subject Area and Standard	1 Family Life	2 Gallery Walk	3 Ancient Neighbors	4 Corn Is Life	5 A Sense of Place	6 Feathered Friends	7 Nature's Harvest	8 Why Build on the Hill?	9 Context & Clues	10 Mapping & Measuring
Reading and Writing Students: 1. Read and understand a variety of materials.		X	X if students read		X	X	X		X	
2. Write and speak for a variety of purposes and audiences.		X	X	X	X	X extension	X	X	X	X
3. Write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling.	X extension									
4. Apply thinking skills to their reading, writing, speaking, listening, and viewing.	X	X	X	X	X	X	X	X	X	X
5. Read to locate, select, and make use of relevant information from a variety of media, reference, and technical sources.		X			X	X	X	X		
6. Read and recognize literature as a record of human experience.				X		X	X			

Escalante Pueblo Curriculum

Correlation with Colorado Model Content Standards (continued)

Subject Area and Standard	The Field Trip Core			Pueblo Culture		Nurturing Environment		Archaeology in Action		
	1 Family Life	2 Gallery Walk	3 Ancient Neighbors	4 Corn Is Life	5 A Sense of Place	6 Feathered Friends	7 Nature's Harvest	8 Why Build on the Hill?	9 Context & Clues	10 Mapping & Measuring
Math										
Students:										
1. Develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.					X extension					X
2. Use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.					X extension					
3. Use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning and processes used in solving these problems.								X	X	X
4. Use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.										X
5. Use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.					X extension					X
6. Link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper and pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving the problems.										X

Escalante Pueblo Curriculum

Correlation with Colorado Model Content Standards (continued)

Subject Area and Standard	The Field Trip Core			Pueblo Culture		Nurturing Environment		Archaeology in Action		
	1 Family Life	2 Gallery Walk	3 Ancient Neighbors	4 Corn Is Life	5 A Sense of Place	6 Feathered Friends	7 Nature's Harvest	8 Why Build on the Hill?	9 Context & Clues	10 Mapping & Measuring
Visual Arts Students: 1. Recognize and use the visual arts as a form of communication.	X	X	X		X extension	X	X			
2. Know and apply elements of art, principles of design, and sensory expressive features of visual arts.				X					X extension	
3. Know and apply visual arts' materials, tools, techniques, and processes.		X							X extension	
4. Relate the visual arts to various historical and cultural traditions.		X	X						X	X
Music Students: 1. Sing or play on instruments a varied repertoire of music, alone or with others.					X extension	X extension				
2. Read and notate music.										
3. Create music.					X extension	X extension				
4. Listen to, analyze, evaluate, and describe music.										
5. Relate music to various historical and cultural traditions.	X				X					

Escalante Pueblo Curriculum

Correlation with Colorado Model Content Standards (continued)

Subject Area and Standard	The Field Trip Core			Pueblo Culture		Nurturing Environment		Archaeology in Action		
	1 Family Life	2 Gallery Walk	3 Ancient Neighbors	4 Corn Is Life	5 A Sense of Place	6 Feathered Friends	7 Nature's Harvest	8 Why Build on the Hill?	9 Context & Clues	10 Mapping & Measuring
History Students: 1. Understand the chronological organization of history and know how to organize events and people into major eras to identify and explain historical relationships.	X	X								
2. Know how to use the processes and resources of historical inquiry.			X					X	X	X
3. Understand that societies are diverse and have changed over time.	X	X	X	X	X	X	X	X	X	X
4. Understand how science, technology, and economic activity have developed, changed, and affected societies throughout history.	X	X	X		X		X extension	X	X	X
5. Understand political institutions and theories that have developed and changed over time.										
6. Know that religious and philosophical ideas have been powerful forces throughout history.				X	X	X	X			

Escalante Pueblo Curriculum

Correlation with Colorado Model Content Standards (continued)

Subject Area and Standard	The Field Trip Core			Pueblo Culture		Nurturing Environment		Archaeology in Action		
	1 Family Life	2 Gallery Walk	3 Ancient Neighbors	4 Corn Is Life	5 A Sense of Place	6 Feathered Friends	7 Nature's Harvest	8 Why Build on the Hill?	9 Context & Clues	10 Mapping & Measuring
Geography Students:										
1. Know how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.			X		X			X	X	X
2. Know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.	X	X	X	X	X			X	X	X
3. Understand how physical processes shape earth's surface patterns and systems.		X								
4. Understand how economic, political, cultural, and social processes interact to shape patterns of human populations, interdependence, cooperation, and conflict.			X	X						
5. Understand the effects of interactions between human and physical systems and the changes in meaning, use, distribution, and importance of resources.			X	X		X	X			X
6. Apply knowledge of people, places, and environments to understand the past and present, and to plan for the future.	X	X	X	X	X	X	X	X		

Escalante Pueblo Curriculum

Correlation with Colorado Model Content Standards (continued)

	The Field Trip Core			Pueblo Culture		Nurturing Environment		Archaeology in Action		
Subject Area and Standard	1 Family Life	2 Gallery Walk	3 Ancient Neighbors	4 Corn Is Life	5 A Sense of Place	6 Feathered Friends	7 Nature's Harvest	8 Why Build on the Hill?	9 Context & Clues	10 Mapping & Measuring
Science Students: 1. Understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.		X		X extension		X	X	X	X	X
2. Know and understand common properties, forms, and changes in matter and energy.				X extension						
3. Know and understand the characteristics and structure of living things, the processes of life, and how living things react with each other and their environment.				X extension		X	X			
4. Know and understand the processes and interactions of earth's systems and the structure and dynamics of earth and other objects in space.										
5. Know and understand interrelationships among science, technology, and human activity and how they affect the world.		X	X				X			
6. Understand that science involves a particular way of knowing and understand common connections among scientific disciplines.		X		X extension				X	X	X

Escalante Pueblo Curriculum Glossary

Analysis - the careful study of artifacts and other clues found during survey and excavation of an archaeological inquiry or investigation.

Ancestral Puebloan - name given to the farming people who lived in the Southwest in ancient times, including the Escalante and Dominguez Pueblos. Formerly known as the Anasazi, they are the ancestors of many southwestern Pueblo groups of today, including the Hopi, Zuni, and Tewa of the Rio Grande Valley.

Archaeology - a science that involves the study of past human cultures by analyzing material evidence (artifacts and sites).

Artifact - any object made or used by humans.

Awl - a long, pointed tool that is used for puncturing or drilling holes in leather or other materials.

Black-on-white pottery - a type of pottery that is decorated with black designs over a white background. It is found in abundance in the Northern San Juan prehistoric cultural region.

Cataloging - recording into a computer system or on card catalogs all of the original context of an artifact and where it can be found in storage.

Ceramic - an archaeological category that includes any artifact made with fired clay, such as pots, jars, ladles, and sculpted animal figures.

Check dam - a line of stones stacked 1–2 ft. high to block a small wash, create a small pool of water, and accumulate fertile sediments.

Community room - a relatively large room used as a gathering place by residents of a community.

Conservation - cleaning and repairing artifacts during curation.

Context - the relationship artifacts have to each other and the situation in which they are found.

Corn Maidens - symbols of the nuturing spirit of corn; two female spirit-like beings with squash blossom hairdos and abstract faces. Similar is the Corn Mother of some Pueblo groups.

Corrugated - a type of ceramic vessel that has an exterior-surface textured pattern. The textured pattern is a type of decoration and is usually found without additional paint decoration. The texture may also be a functional aspect of the vessel, which helps in heat distribution in cooking pots and gives a gripping surface to water vessels.

Culture - a set of learned beliefs, values, behaviors, and tools shared by members of a society.

Appendix B. Glossary

Curation - the longest stage of archaeology. It involves cataloging artifacts like books in a library; cleaning and repairing artifacts (called conservation); and storing artifacts carefully so they do not fall apart over time. Curation occurs so that future generations can go to museums to study, interpret, and enjoy the artifacts.

Data - information, especially observations, measurements, and calculations organized for analysis in a scientific investigation.

Dry farming - farming without an irrigation system other than capture of local rain runoff. This requires planting that utilizes moisture-conserving tillage and drought-resistant crops and is also in sync with the natural weather cycle.

Ethnobotany - the study of the use of plants by people.

Excavated - that which has been dug up from the ground or earth.

Faunal material - artifacts that are composed of various parts of an animal.

Flake - a piece of rock that was chipped off of a larger stone in the process of making stone tools or artifacts.

Floral material - artifacts that are composed of various parts of plants.

Great House - large, preplanned, multiroom structure surrounding a plaza, usually including relatively large kivas with evidence of public or community use and signs of Chacoan building style.

Great Sage Plain - land that is bounded by the Dolores River Valley, the La Plata Mountains, Mesa Verde, Sleeping Ute Mountain, and the Abajo Mountains.

Grinding stone - a piece of stone that was used to grind seeds, corn kernels, or paint pigments, or to sand or polish wood or stone objects.

Habitat - the environment in which an animal or plant naturally lives.

Hammerstone - a type of hard, stone tool that has abrasions or indentations resulting from a hammering action. The tool was usually handheld and thus fits snugly in the palm of the hand.

Heirloom - an object of special value that is handed down from one generation to another.

Hypothesis - an explanation that can be tested by further investigation, observation, and experimentation.

Identity - the distinguishing character of a person; how people think and feel about themselves, and how they define themselves.

Immigrants - people who have moved from one place to a new place.

Inference - a reasoned idea, interpretation, or conclusion that is reached based on evidence or observations.

Inquiry - a systematic investigation using a few scientific methods to reach a conclusion.

Interpretation - translating scientific information into common, everyday language, and explaining scientific ideas in an easy to understand way.

Juniper - an evergreen tree or shrub with scales instead of needles, and berries instead of cones.

Kiva - a room with distinctive features, usually underground, and used as a social community room, political decision-making center, and/or religious ceremonial area.

Lithic - a class of artifacts that are made of stone material.

Mano - a small stone held in one's hand used to grind corn and other substances by rubbing on a larger stone called a metate.

Metate - a large stone used to grind corn and other substances by rubbing with a small stone called a mano.

Native seeds - seeds from plants that were cultivated and used in a local region over a very long period of time.

Natural landmark - a unique formation of the land or other natural feature in an area—for example, the Dolores River, Sleeping Ute Mountain, or the big tree in a grassy park.

Natural resources - materials in nature used for economic activity and basic survival by humans.

Northern San Juan people - Ancestral Puebloans who occupied the Four Corners region, including the Great Sage Plain, the Mesa Verde, and the Dolores River Valley.

Observation - recognizing or noting a factual object or occurrence.

Petroglyph - an ancient or historical, pictorial or geometric, design that is pecked into a smooth stone surface.

Pilaster - a rock base or pier that sets out from the wall and supports the ceiling or a kiva.

Piñon - a pine tree that grows in the desert southwest at about 5,000–7,000 ft. elevation. It has short needles and produces a large, edible nut considered a nutritious delicacy.

Pithouse or pit structure - a room built partially underground and entered through a hole in the roof or by an entry room that slopes to the surface. Early pit structures, prior to A.D 700, are thought to be one room houses. Later in time, specialized ceremonial pit structures were built near surface living and storage rooms (see "Kiva"). Many pit structures functioned both as ceremonial and living rooms.

Planting stick - a special stick about 2–4 ft. long that is smoothed and rounded on the ends and sometimes sculpted and decorated and is used for pushing seeds deep into the ground so as to not disturb the soil.

Plaza - an open area on top of or between buildings and houses where community activities occur.

Point - a piece of stone that has been carefully worked into a pointed shape and used as the tip of an arrow or spear.

Polishing stone - a smooth, round, stone artifact, about 1– 2 in. in diameter, that was used to smooth and polish the surface of clay objects before they were fired.

Pot hunter - a person who digs or collects pots from archaeological sites without permission for his or her own use or to sell for profit.

Protocol - a strict set of procedures to be followed in a given setting.

Pueblo - a Spanish word meaning "town," "city," or "village." In the southwest United States, pueblo is a village of apartment-style buildings usually made out of adobe (sun-baked bricks) or stone masonry. Pueblo is also used to refer to the Native American people who live in the pueblo villages.

Reciprocity - a mutual exchange of aid, goods, and privileges.

Room feature - something that is built into a room, such as a fire hearth, paving stones, or a grinding bin.

Scientific methods - various modes of investigation where the outcome is not predetermined, is based on factual observation and experimentation, and is continually questioned and challenged.

Scrapper - a tool used to scrape hides in making leather or the surface of clay in making ceramic pots, usually made of flat bone or stone.

Seed jar - a special ceramic storage container for keeping seeds for planting.

Sherd - a piece of a ceramic artifact, usually from a bowl or jar. A bowl sherd may have decoration and designs on the outside and inside, while a jar will have designs only on the outside.

Strata - layers of earth.

Survey - the process of finding and mapping the surface of archaeological sites.

T-shaped doorways - doorways shaped like a T that are found in Ancestral Puebloan buildings. There are many practical theories to explain the shape, including (1) the wideness on the top allowed for someone with a bundle to enter, and (2) the small part on the bottom was left uncovered for circulation.

Terrace - land arranged in levels to prevent erosion and to trap and hold available moisture.

Theory - an idea developed from a hypothesis that has been tested and is supported by evidence.

Utilitarian - of or relating to the practical and perhaps everyday use of an object.

Yucca - a plant that grows to about 2 ft. tall with long, spike-like green leaves clustered around a taller flower stalk that reaches several feet in height.

Escalante Pueblo Curriculum
Annotated Bibliography and Recommended Readings

Abrams, David
1996 *The Spell of the Sensuous.* Pantheon Books, New York, NY.

Abrams shares insights gained while doing research as a professional magician on the island of Bali. He observes how Balinese learn directly through experience in the natural environment and from daily activities. He relates the roles of magician, shaman, and teacher in instructing, guiding, and inspiring the community. Written for an adult audience with many psychological terms.

Aliki
1976 *Corn Is Maize.* Harper Collins, New York, NY.

This carefully illustrated first book for younger children is about the best ways to grow, store, and use corn, as well as the historical development of corn usage by Native Americans.

Atkins, Victoria
1990 *Escalante Ruins Complex Cultural Resource Management Plan and Environmental Assessment.* Bureau of Land Management, Dolores, CO.,unpublished report.

This internal government document reviews the history and management needs for the sites on the Anasazi Heritage Center grounds.

Bahti, Mark
1996 *Pueblo Stories and Storytellers.* Treasure Chest Books, Tucson, AZ.

This book contains the story "The Maiden and the Turkeys," as well as many versions of Pueblo stories that are suitable for children.

Basso, Keith H.
1996 *Wisdom Sits in Places.* University of New Mexico Press, Albuquerque, NM.

"This is indeed a brilliant exposition of landscape and language in the world of the Western Apache. But it is more than that. Keith Basso gives us (understanding) about the scared and invisible nature of words and place." — M. Scott Momaday

Bruchac, Joseph and Thomas Locker
1996 *Between Earth & Sky—Legends of Native American Sacred Places.* Voyager Books, Harcourt, Brace and Company, San Diego, CA.

Several legends from various Native American people from around the United States are contained in this volume. They are written to be read to or by children, and large and elegant paintings of the places are discussed. Several focus on southwest landmarks.

Appendix C. Bibliography

Buchanan, Carol
1997 *Brother Crow, Sister Corn: Traditional American Indian Gardening.* Ten Speed Press, Berkely, CA.

This well-researched book explores the connection between cultivated plants, especially corn, among Native American people past and present. For adult readers.

Caduto, Michael J. and Joseph Bruchac
1991 *Keepers of the Animals.* Fulcrum Inc., Golden, CO.

This book contains lessons based on traditional stories and academic activities about animals. Specific to *Feathered Friends* in this curriculum are several bird myths for children that reveal cultural mores, bird ecology, and conservation from a variety of Native American traditions. See chapter 5—Eagle Boy (Zuni); chapter 12—Teachings of the Eagle; The First Flute (Plains); Manabozho and the Woodpecker (Eastern Woodland).

Davis, M. Elaine and Marjorie R. Connolly
2000 *Windows into the Past: Crow Canyon Archaeological Center's Guide for Teachers.* Kendall/Hunt Publishing Company, Dubuque, IA.

Excellent guide for an experiential approach to archaeological education.

Dewey, John
1938 *Experience and Education.* Macmillan Publishing Co. New York, NY.

Written for professionals in education and education planning. It is one of several educational theory classics written by Dewey discussing the psychological and cultural reasons why public schools should include experimental techniques in education. This volume also emphasizes that experiental activities must be minds-on as well as hands-on.

Dunmire, William
1991 *Wild Plants and Native Peoples of the Four Corners.* University of New Mexico Press, Albuquerque, NM.

This delightfully illustrated and masterfully done book has a wealth of information on plants and people of the Four Corners.

Dunmire, William and Gail Tierney
1991 *Wild Plants of the Pueblo Province: Exploring Ancient and Enduring Uses.* University of New Mexico Press, Albuquerque, NM.

This book contains a wealth of information on plants and people of the Rio Grande River Basin, including excellent photographs and illustrations.

Erdoes, Richard and Alfonso Ortiz
1984 *American Indian Myths and Legends*. Pantheon Books, New York, NY.

This book contains classic stories such as "Son of Light Kills the Monster" (Hopi), "The Raven" (Athabaskan), "The Bluebird and the Coyote" (Pima), and "Turkey Makes the Corn and Coyote Plants It" (Navajo). It is a rich collection suitable for all ages.

Goodman, Susan E.
1998 *Stones, Bones, and Petroglyphs: Digging into Southwest Archaeology*. Atheneum Books for Young Readers, New York, NY.

An illustrated account of a middle school field trip to Crow Canyon Archaeological Center and archaeological sites in southwest Colorado. It includes clear explanations of the importance of archaeological site preservation, the science of archaeology, and the Ancestral Puebloan people of the Northern San Juan region. The book places the reader within the story as a member of the field trip. It works well for fourth-grade independent readers because of the many captioned pictures and short text sections. It is interesting to higher-level students as well.

Hallasi, Judith, Alan D. Reed, Adrian S. White, and David A. Breternitz
1979 *The Archaeology and Stabilization of the Dominguez and Escalante Ruins*. Bureau of Land Management–Colorado. Cultural Resource Series, No. 7.

Original site reports for the Escalante and Dominguez sites. Recommended for teachers who want in-depth, technical, site details.

Hansen, Judith Friedman
1979 *Sociocultural Perspectives on Human Learning*. Waveland Press, Inc. Prospect Heights, IL.

An education theory volume that stresses the anthropological contributions to the study of knowledge transmission. Some case studies on southwestern groups included.

Hillerman, Tony (retold by)
1986 *The Boy Who Made Dragonfly*. University of New Mexico Press, Albuquerque, NM.

A traditional Zuni myth about a boy who is accidently abandoned by his family and is charged with caring for his sister. He works for their survival through a long winter using only his traditional knowledge of corn and the environment with guidance from Pueblo spirit beings. A great story to read aloud that presents an in-depth look at a traditional Pueblo way of life and world view.

Hobbs, Will
1997 *Kokopelli's Flute.* Camelot Books, Avon, New York, NY.

Entertaining fantasy/mystery with an ecological/archaeological theme. Well-written adventure for 9–12 year-olds. Excellent to read aloud.

Hogan, Phyllis
1991 *Common Spring Plants of Leupp Boarding School.* Arizona Ethnobotany Research Foundation, Flagstaff, AZ.

A little volume that was developed in collaboration with native elders, school children, and teachers to help preserve the traditional knowledge. Could be used as a template for a local project.

Lomatewama, Ramson
1993 *Drifting through Ancestor Dreams.* Northland Publishing, Flagstaff, AZ.

Poems and short essays written from the perspective of a traditional Hopi living in a contemporary world.

Marriott, Alice
1996, 1952 *Indians of the Four Corners.* Ancient City Press, Santa Fe, NM.

An excellent young reader's introduction to southwest archaeology and Pueblo culture. It includes information on ancient artifacts and their use in daily activities, social structure, and more recent Pueblo history. The simple, clear structure makes it useful as a student encyclopedia or reference book. A few terms are outdated and may need a teacher's explanation.

Mcleod, Christopher (producer), Malinda Maynor (co-producer)
2001 *In Light of Reverence: Protecting America's Sacred Lands.* Bullfrog Films, Oley, PA.

In Light of Reverence explores cultural and land-use conflicts of three North American sites considered sacred by the Lakota, Hopi, and Wintu. Appropriate for middle school through adult levels.

Moore, Michael
1979 *Medicinal Plants of the Mountain West.* The Museum of New Mexico Press, Santa Fe, NM.

Useful as a field guide for plant identification or as an ethnobotanical desktop reference. Moore's writing style is fun and informative to a general and professional audience. Includes pharmaceutical analysis of some plants.

Nabhan, Gary
1987 *Gathering the Desert.* University of Arizona Press, Tucson, AZ.

Insightful and entertaining, Nabhan discusses both wild and domesticated plants of the southwest. His holistic essays on each plant reveal their natural history, ethnobotanical uses, and place in geopolitical history.

Nicols, Theresa
1999 *Aztec Ruins National Monument Teacher's Guide, Grades 4-7.* Hilton Publishing.

Lessons in archaeology designed for Aztec National Monument. Several of the lessons can be presented in the classroom and contain a wealth of background information in archaeology and pueblo culture.

Ortiz, Simon
1998 *Speaking for Generations: Native Writers on Writing.* University of Arizona Press, Tucson, AZ.

Palmer, William R
1978 *Why the North Star Stands Still and Other Indian Legends.* Zion Natural History Association, Springdale, UT.

Contains classic and rare stories from the Paiute tradition. Specific to this curriculum are several stories with bird characters such as "Why the Birds Wear Bright Plumage," "How the Eagle Got Smoke in his Feathers," "How the Seasons Were Set," and "How Flowers Got Their Colors."

Peterson, Roger Tory
1986 *Peterson First Guides: Birds.* Houghton Mifflin Co., New York, NY.

This students guide provides excellent introductory material on what to look for when identifying birds in general. Each bird entry is simplified and clear. Entries are organized in the same way as standard bird guidebooks, by related families. Scientific names are ommitted.

Sando, Joe S.
1992 *Pueblo Nations: Eight Centuries of Pueblo Indian History.* Clear Light Publishers, Santa Fe, NM.

Written by a respected educator and elder of the Jemez Pueblo, this 800 year history of the nineteen pueblos in New Mexico is a story of people sustained by ages old traditions and beliefs, who have adapted to the radical changes of the modern world.

Sauer, Peter (editor)
1992 *Finding Home: Writings on Nature and Culture.* Orion Magazine, Beacon Press.

Smardz, Carolyn and Shelley J. Smith
2000 *The Archaeology Education Handbook: Sharing the Past with Kids.* The Society for American Archaeology and AltaMira Press, Walnut Creek, CA.

Innovative guidebook introduces archaeologists and educators to the most current ideas of teaching the basics of archaeology to children.

Smith, Shelley J., Jeanne M. Moe, Kelly A. Letts, and Danielle M. Patterson
1996 *Intrigue of the Past: A Teacher's Guide for Fourth through Seventh Grades.* Department of the Interior, Bureau of Land Management, Heritage Education Program.

Classroom lessons that address archaeological concepts, cultural relativity, scientific processes, and ethical issues. Thorough and easily used, this curriculum can be obtained free of charge by attending a Project Archaeology teacher's workshop. Ask at the Anasazi Heritage Center for details.

Stokes, Donald W., Lillian Q. Stokes
1996 *Stoke's Beginner's Guide to Birds.* Little, Brown and Company, New York, NY.

This beginner's guide organizes bird entries by color. Photos of each bird are paired with information broken into easy categories of bird characteristics and habitat components.

Swidler, Nina, Kurt E. Dongoske, Roger Anyon, and Alan S. Downer
1997 *Native Americans and Archaeologists: Stepping Stones to Common Ground.* The Society for American Archaeology and AltaMira Press, Walnut Creek, CA.

A collection of essays about the changing relationship between archaeologists and Native Americans.

Thompson, Ian
n.d. *The Escalante Community.* Southwest Natural and Cultural Heritage Association, Albuquerque, NM.

The only publication for a lay audience about the Escalante Pueblo archaeological site. It is written with an eye for archaeological detail and sensitivity to Pueblo culture that made "Sandy" Thompson both a respected author and admired friend in this region.

Trimble, Stephen
1990 *Village of Blue Stone*. Simon and Schuster Books for Young Readers, New York, NY.

Carefully researched and meticulously illustrated fictional account of one year in the life of the Ancestral Puebloans. The "Afterward" section dramatizes the work of modern archaeologists.

Tyler, Hamilton
1991 *Pueblo Birds and Myths*. University of Oklahoma Press and Northland Publishing, Flagstaff, AZ.

A comprehensive and unique volume written for scholars of ethnology as well as bird enthusiasts. It contains many abbreviated Pueblo stories, compares and summarizes perspectives from most Pueblo groups, and categorizes birds in a general Puebloan framework.

Underhill, Ruth
1946 *Life in the Pueblos*. Reprinted in 1991 by Ancient City Press, Santa Fe, NM.

An interesting and engaging study of family and village life of the Pueblo people. The chapter titled "Cultivated Crops, Storage and Cookery" is informative for the *Corn Is Life* lesson and suitable to be read to a class.

U.S. Department of the Interior, Bureau of Land Management
2000 *Intrigue of the Past: Discovering Archaeology in Colorado*. Bureau of Land Management, Heritage Education Program.

Stories of historic and prehistoric fiction with accompanying lesson plans related to Colorado archaeology that augment *Intrigue of the Past*. The stories have engaging plots, rich artifact details, and archaeological accuracy, and are presented from the perspectives of children. The Archaic and Pueblo period stories are especially pertinent to this curriculum. They are written for the 4th– to 7th–grade audience, but are enjoyable for older students as well.

Varien, Mark D., Ronald H. Towner, Tobi Taylor, and David R. Abbott (editors)
2000 *Kiva Volume 66, 1*. The Arizona Archaeological and Historical Society.

Clear and succinct summaries of current research and archaeological perspectives on the Northern San Juan Anasazi in SW Colorado. Written for a technical and general audience.

Vasquez, Miguel, Leigh Jenkins Kuwanwisiwma, and Ramson Lomatewama
1994 "Reciprocity and Sustainability: Terrace Restoration on Third Mesa." *Practicing Anthropology, Vol. 16 Number 2, Spring*.

An interesting account of the restoration of some abandoned terrace gardens at Hopi. An inside look at "raising kids the Hopi way."

Warner, Ted J. (editor), Fray Angelico Chavez (translator)
1975 *The Dominguez-Escalante Journal*. University of Utah Press, Salt Lake City, UT.

A translation of the daily journal entries of the Dominguez-Escalante expedition appropriate for 6th through adult level readers.

Warren, Scott
1992 *Cities in the Sand: The Ancient Civilizations of the Southwest*. Chronicle Books, San Francisco, CA.

A good description of southwest archaeology and archaeological sites. Each section has a series of interactive questions, designed to have young readers form their own theories and to prompt discussion. Vocabulary and the amount of text make the book most appropriate for middle-level independent readers or as a study text for fourth- and fifth-grade classes.

Wheeler, Elizabeth M.
1994 *Mother Earth's Mercantile*. Crow Canyon Archaeological Center, Cortez, CO.

Plants of the Four Corners region and their uses through time. Easily used by students to identify plants.

Williams, Terry Tempest and John Telford (photographer)
1989 *Coyote's Canyon*. Peregrine Smith Books, Salt Lake City, UT.

A collection of brief poetic essays and beautiful photographs about the canyons, people, and archaeology of southeast Utah appropriate at the middle school level. Pertinent to *Archaeology in Action* is the essay "Buried Poems," and specific to *A Sense of Place* is "Kokopelli's Return."

Escalante Pueblo Curriculum
Teacher Evaluation Form

Teacher Name:_____

School:_____ Phone:_____

Title of Curriculum Activities used:_____

_____

_____

Grade of students who used the Curriculum Activities:_____

Was the material provided appropriate for your curriculum needs? Yes No

In what ways was it useful to you?_____

_____

_____

Was the structure of the Curriculum Activities useful? Yes No
(Lesson Plan, Group Leader, Student Notebook)

Suggestions to improve the Curriculum Activities:_____

_____

_____

_____

Additional Curriculum Activities that you would like to see added:_____

_____

_____

Did the Curriculum Activities enhance understanding of the museum exhibits? Yes No

How did the use of the Curriculum Activities effect your overall visit at the Anasazi Heritage Center?

_____

_____

_____

Appendix D. Teacher Evaluation Form

Did you or are you planning to use additional Curriculum Activities or extensions in your classroom? Yes No

If yes, which ones?_____

_____

_____

_____

Would you be willing to assist in making future additions and/or changes to the Curriculum Activities? Yes No

If yes, how should we contact you?_____

_____

_____

Additional comments or suggestions?_____

_____

_____

_____

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_____

_____

_____

Thank you for your time and consideration!

Please mail or deliver this form to:
BLM Anasazi Heritage Center, 27501 Hwy 184, Dolores, CO. 81323
or FAX to (970) 882-7035
email: suzan_craig@co.blm.gov

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